

SEQUENCE LISTING

<110> Jacobs, Kenneth
 McCoy, John M.
 LaVallie, Edward R.
 Collins-Racie, Lisa A.
 Evans, Cheryl
 Merberg, David
 Treacy, Maurice
 Agostino, Michael J.
 Steininger II, Robert J.
 Spaulding, Vikki
 Wong, Gordon G.
 Clark, Hilary
 Fechtel, Kim
 Genetics Institute, Inc.

<120> SECRETED PROTEINS AND POLYNUCLEOTIDES ENCODING THEM

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attcactgtc agcttattaa tgttttctgt acccataat gaattttaaa ttacmaaaaa 1860
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ttttaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1969

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<210> 8
 <211> 74
 <212> PRT
 <213> Homo sapiens

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Lys Asp Pro Tyr Gly Phe Leu Thr Thr Val Ile Leu Ala Leu Thr Pro
  20             25            30

Leu Phe Leu Ala Ser Ala Val Leu Ser Trp Lys Leu Ala Lys Met Ile
  35             40            45

Glu Ala Arg Glu Lys Glu Gln Lys Lys Lys Gln Lys Arg Gln Glu Asn
  50             55            60

Ile Ala Lys Ala Lys Arg Leu Lys Lys Asp
  65             70

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<210> 9
 <211> 819
 <212> DNA
 <213> Homo sapiens

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aaaataagcc tgaatgcttt ttcttagtat gcaatttgct gtctattttt aacttgtaca 240
cagaggggcca aaaagaaaaat tccatgagga catgagagtg cattgagggt gcagggtatac 300
agtcacccaaa gaacctgaaa taattgccgg aatgatatcc tctaaaagat gtgagcctct 360
cagagagaga gagagagggt tcctcttgca acaggcatcg tgtgtgtgtt ttatgtccct 420
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aatccacca ttaaagacat gctctttgtt ttttcaatct gtgacccag caatctcttt 540
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aaacagatgg aagctttaca tttttgttta gtttttaaga gcagttttta taacatcgct 660
taagaccatt ctgatgcac atactgttta cactcaaagc tttgtagcta agatgtttac 720
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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 819

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<210> 10
 <211> 89
 <212> PRT

<213> Homo sapiens

<400> 10

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Phe Leu Leu Gln Gln Ala Ser Cys Val Cys Phe Met Ser Leu Leu Phe
 20 25 30

Cys Cys Cys Ala Leu Asn Ser Val Pro Ala Val Ser Gly Arg Leu Glu
 35 40 45

Lys Lys Ile Pro Pro Leu Lys Thr Cys Ser Leu Phe Phe Gln Ser Val
 50 55 60

Thr Pro Ala Ile Ser Leu Ala Ser His Gly Ser Val Asn Trp His Thr
 65 70 75 80

Ala Ala Val Arg Gln Trp Lys Lys Ser
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<210> 11

<211> 1969

<212> DNA

<213> Homo sapiens

<400> 11

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| tgccagggcc | ccggaggagg | ggttccccgc | tacgcctgtg | ccggaggagt | tccagtcacc | 120 |
| gagcgagggg | cgcaaggggtg | ggtgcatcct | gcgctgcggc | gggcgcgcta | cccagacgct | 180 |
| ggtgtgcaga | gccacatgaa | gcctgctggg | gactgggggc | caggagagcag | caagccagct | 240 |
| gggactgagg | cggacgctgt | ctcagggaga | cgctgactcg | caaagacact | cccttccttg | 300 |
| tgcttgggta | aaaagtctcc | tcctgggggtc | cctggccatc | ctgaatatcc | agaatgggtg | 360 |
| ttctgaagtt | cttctgcatg | agttttcttct | gccacctgtg | tcaaggctac | ttcgtatggc | 420 |
| ccctctaccc | agagatgtcc | aatgggactc | tgcaccacta | cttcgtgccc | gatggggact | 480 |
| atgaggagaa | cgatgacccc | gagaagtgcc | agctgctctt | cagggtgagt | gaccacaggc | 540 |
| gctgctccca | gggggagggg | agccagggtg | gcagcctgct | gagcctcacc | ctgcgggagg | 600 |
| agttcacccg | gctggggcgc | caggtggagg | atgctgggcg | cgtgctggag | ggcatcagca | 660 |
| aaagcatctc | ctacgacctc | gacggggaag | agagctatgg | caagtacctg | cggcgggagt | 720 |
| cccaccagat | cggggatgcc | tactccaact | cggacaaatc | cctcactgag | ctggagagca | 780 |
| agttcaagca | gggcccaggaa | caggacagcc | ggcaggagag | caggctcaac | gaggactttc | 840 |
| tgggaatgct | ggtccacacc | aggtccctgc | tgaaggagac | actggacatc | tctgtggggc | 900 |
| tcagggacaa | atagcagctg | ctggccctca | ccattaggag | ccatgggacc | cgactaggtc | 960 |
| ggctgaaaaa | tgattatctt | aaagtatagg | tggaggagata | caaagtctag | aaagagggaa | 1020 |
| tcaaatcagc | cccgttttgg | aggggtggggg | acagaagatg | gggctacatt | ttccccatac | 1080 |
| ctactatttt | tttatatccc | gatttgcact | ttgagaatac | atctaaggtc | atcttttcaa | 1140 |
| agagaaaaat | tggacacttg | agtgactttg | tttttagttt | tgtttttgta | cattatttat | 1200 |
| gtgattgtta | tgggaattgtc | acctggaaag | aacaatttta | agcaatgtca | tttctagatg | 1260 |
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| gtgcggaatt | aaacttcccc | atcctgcaga | ttatgtggaa | atacccaaag | ataatagtgc | 1380 |
| atagctcctt | tcagcctcta | gccttcactc | ctgggctcca | aaagctatcc | cagttgcctg | 1440 |
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| cagtattgcc | acaaaactat | aggcaaatcg | tgtttgcagg | gagatttctg | atgcctctgt | 1620 |
| gggtgtgtgt | aagttaaagt | ggccacattt | aagaaggcca | agctttgtag | tggttgcaca | 1680 |
| gtcacactga | tatgctgatt | tgctctttct | cattgtatgt | ctatgctttg | tcatacgtgc | 1740 |
| tatagtaaat | tacaaagaaa | taggtagatt | gtatgaacat | acccacaaat | gcctatgatt | 1800 |
| taggttacca | atgtattctt | tctcatttgg | ggttttgctt | ctgtctgtct | gtttatttga | 1860 |
| aacttgtact | tcaagtaggg | ggaatcctaa | ttctaataac | tccttagcta | agttttatta | 1920 |
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10

<210> 12
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 <212> PRT
 <213> Homo sapiens

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 Leu His His Tyr Phe Val Pro Asp Gly Asp Tyr Glu Glu Asn Asp Asp
 35 40 45
 Pro Glu Lys Cys Gln Leu Leu Phe Arg Val Ser Asp His Arg Arg Cys
 50 55 60
 Ser Gln Gly Glu Gly Ser Gln Val Gly Ser Leu Leu Ser Leu Thr Leu
 65 70 75 80
 Arg Glu Glu Phe Thr Val Leu Gly Arg Gln Val Glu Asp Ala Gly Arg
 85 90 95
 Val Leu Glu Gly Ile Ser Lys Ser Ile Ser Tyr Asp Leu Asp Gly Glu
 100 105 110
 Glu Ser Tyr Gly Lys Tyr Leu Arg Arg Glu Ser His Gln Ile Gly Asp
 115 120 125
 Ala Tyr Ser Asn Ser Asp Lys Ser Leu Thr Glu Leu Glu Ser Lys Phe
 130 135 140
 Lys Gln Gly Gln Glu Gln Asp Ser Arg Gln Glu Ser Arg Leu Asn Glu
 145 150 155 160
 Asp Phe Leu Gly Met Leu Val His Thr Arg Ser Leu Leu Lys Glu Thr
 165 170 175
 Leu Asp Ile Ser Val Gly Leu Arg Asp Lys Tyr Glu Leu Leu Ala Leu
 180 185 190
 Thr Ile Arg Ser His Gly Thr Arg Leu Gly Arg Leu Lys Asn Asp Tyr
 195 200 205
 Leu Lys Val
 210

<210> 13
 <211> 2020
 <212> DNA
 <213> Homo sapiens

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11.

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 35 40 45
 Phe Asn Leu Pro Val Lys Gln Trp Tyr Phe Asn Ser Ser Asp Asn Asn
 50 55 60
 Leu Gln Tyr Trp Gly Leu Asp Tyr Pro Pro Leu Thr Ala Tyr His Ser
 65 70 75 80
 Leu Leu Cys Ala Tyr Val Ala Lys Phe Ile Asn Pro Asp Trp Ile Ala
 85 90 95
 Leu His Thr Ser Arg Gly Tyr Glu Ser Gln Ala His Lys Leu Phe Met
 100 105 110
 Arg Thr Thr Val Leu Ile Ala Asp Leu Leu Ile Tyr Ile Pro Ala Val
 115 120 125
 Val Leu Tyr Cys Cys Cys Leu Lys Glu Ile Ser Thr Lys Lys Lys Ile
 130 135 140
 Ala Asn Ala Leu Cys Ile Leu Leu Tyr Pro Gly Leu Ile Leu Ile Asp
 145 150 155 160
 Tyr Gly His Phe Gln Tyr Asn Ser Val Ser Leu Gly Phe Ala Leu Trp
 165 170 175
 Gly Val Leu Gly Ile Ser Cys Asp Cys Asp Leu Leu Gly Ser Leu Ala
 180 185 190
 Phe Cys Leu Ala Ile Asn Tyr Lys Gln Met Glu Leu Tyr His Ala Leu
 195 200 205
 Pro Phe Phe Cys Phe Leu Leu Gly Lys Cys Phe Lys Lys Gly Leu Lys
 210 215 220
 Gly Lys Gly Phe Val Xaa Leu Val Lys Leu Ala Xaa Ile Val Val Ala
 225 230 235 240
 Ser Phe Val Leu Cys Trp Leu Pro Phe Phe Thr Glu Arg Glu Gln Thr
 245 250 255
 Leu Gln Val Leu Arg Arg Leu Phe Pro Val Asp Arg Gly Leu Phe Glu
 260 265 270
 Asp Lys Val Ala Asn Ile Trp Cys Ser Phe Asn Val Phe Leu Lys Ile
 275 280 285
 Lys Asp Ile Leu Pro Arg His Ile Gln Leu Ile Met Ser Phe Cys Phe
 290 295 300
 Thr Phe Leu Ser Leu Leu Pro Ala Cys Ile Lys Leu Ile Leu Gln Pro
 305 310 315 320
 Ser Ser Lys Gly Phe Lys Phe Thr Leu Val Ser Cys Ala Leu Ser Phe
 325 330 335
 Phe Leu Phe Ser Phe Gln Val His Glu Lys Ser Ile Leu Leu Val Ser
 340 345 350
 Leu Pro Val Cys Leu Val Leu Ser Glu Ile Pro Phe Met Ser Thr Trp
 355 360 365

Phe Leu Leu Val Ser Thr Phe Ser Met Leu Pro Leu Leu Leu Lys Asp
 370 375 380
 Glu Leu Leu Met Pro Ser Val Val Thr Thr Met Ala Phe Phe Ile Ala
 385 390 395 400
 Cys Val Thr Ser Phe Ser Ile Phe Glu Lys Thr Ser Glu Glu Glu Leu
 405 410 415
 Gln Leu Lys Ser Phe Ser Ile Ser Val Arg Lys Tyr Leu Pro Cys Xaa
 420 425 430
 Thr Phe Leu Ser Arg Ile Xaa Gln Tyr Leu Phe Leu Ile Ser Val Ile
 435 440 445
 Thr Met Val Leu Leu Thr Leu Met Thr Val Thr Leu Asp Pro Pro Gln
 450 455 460
 Lys Leu Pro Asp Leu Phe Ser Val Leu Val Cys Xaa Val Ser Cys Leu
 465 470 475 480
 Asn Phe Leu Phe Phe Leu Val Tyr Phe Asn Ile Ile Ile Met Trp Asp
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 500 505

<210> 15
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 <212> DNA
 <213> Homo sapiens

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 aacatcatca tcatttttct catgtttctc aacaccttcg tcttccaggc tggcctgggc 360
 aacctcctat tccataagtt caaagggacc atcatcctga cagctgtgta ctttgccctc 420
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 tttttcttga ctacaagtct tcaaaataat gttttcattt ttttcttctt ttttccattt 600
 ttttccaatt tggagtcact gaaaactaag ctgtgctttc ataaagccct gcaaactgaa 660
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 acctgcctac cgatgtatgg acttcagagt aatgtggctt atagcaattt tccaggattg 780
 ttcttttggt tgttgttgtt ctcccttctc cccctattt tgtctttatg ggacatgaca 840
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 aaccatccta gccatgagag ataagataaa aaaaaaaaaa 940

<210> 16
 <211> 130
 <212> PRT
 <213> Homo sapiens

<400> 16
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 1 5 10 15

14

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 20 25 30
 Lys Thr Pro Val Ile Gln Leu Val Leu Phe Ile Ile Gln Asp Ile Ala
 35 40 45
 Val Leu Phe Asn Ile Ile Ile Ile Phe Leu Met Phe Phe Asn Thr Phe
 50 55 60
 Val Phe Gln Ala Gly Leu Val Asn Leu Leu Phe His Lys Phe Lys Gly
 65 70 75 80
 Thr Ile Ile Leu Thr Ala Val Tyr Phe Ala Leu Ser Ile Ser Leu His
 85 90 95
 Val Trp Val Met Asn Leu Arg Trp Lys Asn Ser Asn Ser Phe Ile Trp
 100 105 110
 Thr Asp Gly Leu Gln Met Leu Phe Val Phe Gln Arg Leu Val Trp Thr
 115 120 125
 Glu Phe
 130

<210> 17
 <211> 1348
 <212> DNA
 <213> Homo sapiens

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 tccttgca caaaggtcatg tacttattag tccctcttct taaccgaggg aatgataaac 180
 ataaactcac atctgcaggc ttttttgtgg agcttctccg gagtccagtg gccaagagac 240
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<210> 18
 <211> 362
 <212> PRT
 <213> Homo sapiens

<400> 18

15.

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 Leu Leu Ala Gln Lys Val Met Tyr Leu Leu Val Pro Leu Leu Asn Arg
 35 40 45
 Gly Asn Asp Lys His Lys Leu Thr Ser Ala Gly Phe Phe Val Glu Leu
 50 55 60
 Leu Arg Ser Pro Val Ala Lys Arg Leu Pro Ser Ile Tyr Ser Val Ala
 65 70 75 80
 Arg Phe Lys Asp Trp Leu Gln Asp Gly Asn His Leu Phe Arg Ile Leu
 85 90 95
 Gly Leu Arg Gly Leu Tyr Asn Leu Val Gly His Gln Glu Met Arg Glu
 100 105 110
 Asp Ile Lys Ser Leu Leu Pro Tyr Ile Val Asp Ser Leu Arg Glu Thr
 115 120 125
 Asp Glu Lys Ile Val Leu Ser Ala Ile Gln Ile Leu Leu Gln Leu Val
 130 135 140
 Arg Thr Met Asp Phe Thr Thr Leu Ala Ala Met Met Arg Thr Leu Phe
 145 150 155 160
 Ser Leu Phe Gly Asp Val Arg Ser Asp Val His Arg Phe Ser Val Thr
 165 170 175
 Leu Phe Gly Ala Ala Ile Lys Ser Val Lys Asn Pro Asp Lys Lys Ser
 180 185 190
 Ile Glu Asn Gln Val Leu Asp Ser Leu Val Pro Leu Leu Leu Tyr Ser
 195 200 205
 Gln Asp Glu Asn Asp Ala Val Ala Glu Glu Ser Arg Gln Val Leu Thr
 210 215 220
 Ile Cys Ala Gln Phe Leu Lys Trp Lys Leu Pro Gln Glu Val Tyr Ser
 225 230 235 240
 Lys Asp Pro Trp His Ile Lys Pro Thr Glu Ala Gly Thr Ile Cys Arg
 245 250 255
 Phe Phe Glu Lys Lys Cys Lys Gly Lys Ile Asn Ile Leu Glu Gln Thr
 260 265 270
 Leu Met Tyr Ser Lys Asn Pro Lys Leu Pro Ile Arg Arg Ser Ala Val
 275 280 285
 Leu Phe Val Gly Leu Leu Ser Lys Tyr Met Asp His Asn Glu Leu Arg
 290 295 300
 Arg Met Gly Thr Asp Trp Ile Glu Asp Asp Leu Arg Asp Leu Leu Cys
 305 310 315 320
 Asp Pro Glu Pro Ser Leu Cys Ile Ile Ala Ser Gln Thr Leu Leu Leu
 325 330 335

16

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Leu Gln Lys Leu Met Gly Arg Ser Ser Ala
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<210> 19
 <211> 1656
 <212> DNA
 <213> Homo sapiens

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 <213> Homo sapiens

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Gly Thr Thr Leu Ile Met Leu Leu Ser Leu Ala Ala Phe Ser Val Ile
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 Phe Arg Ile Tyr Lys Ser Val Ile Gln Ala Val Gln Lys Ser Glu Glu
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 Gly His Pro Phe Lys Ala Tyr Leu Asp Val Asp Ile Thr Leu Ser Ser
 115 120 125
 Glu Ala Phe His Asn Tyr Met Asn Ala Ala Met Val His Ile Asn Arg
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 Ala Leu Lys Leu Ile Ile Arg Leu Phe Leu Val Glu Asp Leu Val Asp
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 Ser Leu Lys Leu Ala Val Phe Met Trp Leu Met Thr Tyr Val Gly Ala
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 Val Phe Asn Gly Ile Thr Leu Leu Ile Leu Ala Glu Leu Leu Ile Phe
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 Ser Val Pro Ile Val Tyr Glu Lys Tyr Lys Thr Gln Ile Asp His Tyr
 195 200 205
 Val Gly Ile Ala Arg Asp Gln Thr Lys Ser Ile Val Glu Lys Ile Gln
 210 215 220
 Ala Lys Leu Pro Gly Ile Ala Lys Lys Lys Ala Glu
 225 230 235

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 <212> DNA
 <213> Homo sapiens

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<210> 22

<211> 47

<212> PRT

<213> Homo sapiens

<400> 22

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  1             5             10             15

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Leu Ser Phe Trp Ile Val Ile Ile Tyr Leu Ile Ala Cys Leu Ser Ala
  20             25             30

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Ser Phe Cys Val Ser Asn Asn Lys Asp His Ile Phe Leu Val Asn
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<210> 23

<211> 1132

<212> DNA

<213> Homo sapiens

<220>

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<222> (1009)

<400> 23

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tatacacaca caatttccca gttcgtattt ttcattatgt catgtacctt attgatagct 960

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19

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<211> 98

<212> PRT

<213> Homo sapiens

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Met Val Tyr Phe Lys Phe Ile Lys Leu Ile Cys Met Cys Leu Phe Val
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Leu Leu Leu Leu Arg Gly Leu Gly Leu Gly Ser Trp Gln Pro Ala Leu
 20 25 30

Met Tyr Phe Ser Pro Leu Tyr Phe Ile Ile Phe Leu Lys Ser Ser Asn
 35 40 45

Leu Asn Thr Trp Thr Ser Tyr Trp Ile Thr Leu Ile His Ile Phe Ile
 50 55 60

Ile Leu Ser Ile His Phe Ala Thr Tyr Thr Pro Cys Asp Asp Phe Lys
 65 70 75 80

Pro Asp Phe Cys Ile Glu Asn Val Lys Arg Met Ala Phe Phe Arg Gly
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Ser Lys

<210> 25

<211> 401

<212> DNA

<213> Homo sapiens

<400> 25

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<210> 26

<211> 38

<212> PRT

<213> Homo sapiens

<400> 26

Met Glu Met Val Ser Lys Lys Phe Tyr Phe Ser Phe Phe Cys Leu Tyr
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Thr Leu Ile Pro Ile Ile Gln Cys Tyr Lys Leu Cys Thr Glu Asn Lys
 20 25 30

Met Phe Glu Ile Gln Glu
 35

20

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 <211> 755
 <212> DNA
 <213> Homo sapiens

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<210> 28
 <211> 86
 <212> PRT
 <213> Homo sapiens

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 20 25 30
 Lys Phe Leu Glu Val Arg Phe Pro Gly Gln Arg Leu Asn Ala His Val
 35 40 45
 Ile Leu Leu Asp Ile Val Lys Ser Pro Tyr Arg Ala Cys Thr Thr Gln
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 His Ser Pro Gln Arg Cys Met Arg Gly Thr Ile Ser Pro Trp Pro His
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 Gln Gln Ile Trp Leu Leu
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 <211> 885
 <212> DNA
 <213> Homo sapiens

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21

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<210> 30

<211> 186

<212> PRT

<213> Homo sapiens

<400> 30

Met Lys Met Gln Lys Gly Asn Val Leu Leu Met Phe Gly Leu Leu Leu
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His Leu Glu Ala Ala Thr Asn Ser Asn Glu Thr Ser Thr Ser Ala Asn
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Thr Gly Ser Ser Val Ile Ser Ser Gly Ala Ser Thr Ala Thr Asn Ser
 35 40 45

Gly Ser Ser Val Thr Ser Ser Gly Val Ser Thr Ala Thr Ile Ser Gly
 50 55 60

Ser Ser Val Thr Ser Asn Gly Val Ser Ile Val Thr Asn Ser Glu Phe
 65 70 75 80

His Thr Thr Ser Ser Gly Ile Ser Thr Ala Thr Asn Ser Glu Phe Ser
 85 90 95

Thr Ala Ser Ser Gly Ile Ser Ile Ala Thr Asn Ser Glu Ser Ser Thr
 100 105 110

Thr Ser Ser Gly Ala Ser Thr Ala Thr Asn Ser Glu Ser Ser Thr Pro
 115 120 125

Ser Ser Gly Ala Ser Thr Ala Thr Asn Ser Asp Ser Ser Thr Thr Ser
 130 135 140

Ser Gly Ala Ser Thr Ala Thr Asn Ser Asp Ser Ser Leu Gly Asn Lys
 145 150 155 160

Ser Gly Thr Leu Phe Gln Lys Arg Lys Lys Glu Ile Gln Leu Pro Leu
 165 170 175

Lys Val Gln Leu Tyr Ser Val Ile Asp Lys
 180 185

<210> 31

<211> 3285

<212> DNA

<213> Homo sapiens

<400> 31

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<210> 32

<211> 184

<212> PRT

<213> Homo sapiens

<400> 32

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Met Ile Ser Phe Ala Val Gln Lys Leu Phe Ser Ser Met Gln Ser Cys
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Met Phe Ile Phe Leu Leu Leu Leu Val Leu Leu Gly Ser Tyr Ala Arg
      20                      25                      30

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Ser Asp Thr Thr Leu Lys Pro Arg Pro Val Ser Trp Ser Phe Ser Pro
    35                      40                      45

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Val Phe Ser Ser Thr Gly Phe Thr Val Ser Gly Leu Thr Ile Lys Pro
 50 55 60

Leu Ser Ile Leu Asn Gly Phe Leu Cys Arg Asp Ile Pro Ser Thr Arg
 65 70 75 80

Ala Ser Ser Gly Leu Ala Asp Ala Pro Pro Ser Pro Leu Cys Pro Leu
 85 90 95

His Ser Thr Leu Phe Met Trp Lys Asn Pro Trp His Pro Arg Val Ala
 100 105 110

Ser Leu Ser Tyr Pro Ala Pro His Gly Asp Leu Thr Leu Ala Ser Leu
 115 120 125

Thr Trp Val Ser Leu Pro Asn Pro Leu Pro Gly Pro Thr Thr Ala Ser
 130 135 140

Ile Pro Asp Leu Pro Arg Gly Pro Ile Pro Ala Val Leu Arg His Leu
 145 150 155 160

Arg Ala Val Ser Glu Leu Phe Ser Leu Thr Val His Asn Arg Ser Ala
 165 170 175

Lys Glu Ser Cys Arg Leu Phe Leu
 180

<210> 33
 <211> 1819
 <212> DNA
 <213> Homo sapiens

<400> 33

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| tgggaggccg | aggcagggtg | atcgtgaggt | caggagatca | agaccatcct | ggctaacacg | 180 |
| gtgaaacccc | atctctacta | aaaatacaaa | aaattcgccg | ggcgtgggtg | caggcgccctg | 240 |
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| tgcagtgagc | cgagatcgcg | ccactgcact | ccagcctggg | tgacagaccg | agactctgtc | 360 |
| tcaaacaaaa | aacaaaaaac | aaaacaaaaac | aaagatcaaa | tgaatgatag | aatttgaaaa | 420 |
| ctacgctctt | taattttaca | aatcatgga | ttttcgtggt | gatagcaatg | gatgcgaaga | 480 |
| ccattaggtg | aaaaatggat | aggaagctta | taatgcatgg | agcagaatga | caggacacta | 540 |
| atctatatta | acatctctaa | atgagatcag | ccagatgaac | ttgatgtgat | gaaatggata | 600 |
| cacacagtgg | acacctgtga | agttttcttg | gctcccccac | aactgagaag | tacaagttag | 660 |
| tctccaaacc | taattaccag | tttacaggaa | acatggggaa | taaaagaaca | aattaacaac | 720 |
| acaaagaagc | aaacaaccaa | atgcacaatt | tgggaaattc | tgcagaagta | atggcctagt | 780 |
| tttttaacca | atacatgtca | aaaaaaaaaa | aaaaaaagac | aaaaatggaa | tcctacactt | 840 |
| taaaggagac | taagaaacgt | atccttcaaa | tacagtgtat | ggagcatttt | aggatccttg | 900 |
| tgttaaaatg | cgcttgggat | ttgttttaat | caatcatggg | gagacaggca | gacatggaaa | 960 |
| ttattgtcat | gaaggaagaa | gtttatacgc | agatcccaca | aacgggaggc | atggcatggc | 1020 |
| atgcagggtc | acgtaaagaa | gcacctgggt | gtatcaggag | gcagagggtg | agagcacagc | 1080 |
| atggcccaga | gcttttattg | ggggttttca | tgggaaggaa | tggacaaggc | aggggtaggc | 1140 |
| acactggtaa | gcttaggatt | gaatagtttg | agtaattttg | ttggtctctg | ggatctaggg | 1200 |
| gggattcgta | attgtctagt | tagggcaggg | gaatattgaa | ttggtgtatg | agagtttggt | 1260 |
| aaaggagata | gttgggagta | tgggctctgg | attggttggt | ttgtatatga | aaggcatgct | 1320 |
| tgcagtggag | tttatcatct | atgcattagc | ttgccctggg | aggggcagcc | tatccaggat | 1380 |
| caaggcccca | agtggccaga | gcataaggaa | tacagaaaat | aaagaaaaca | tagtcaatac | 1440 |
| aagatttgaa | ggaataaaat | gtctctacat | attgtacaaa | tgtaaacatg | gattgggttac | 1500 |
| taaagtatac | gaaataattt | attgttcata | tgtaggcat | gactatggca | ttatgggtat | 1560 |
| atgtgtatga | gtccttaagt | gtagagatt | catactgagg | tatttaaggc | tgaaatgtta | 1620 |

24

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<210> 34

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<213> Homo sapiens

<400> 34

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 20 25 30

Arg Ile Lys Ala Pro Ser Gly Gln Ser Ile Arg Asn Thr Glu Asn Lys
 35 40 45

Glu Asn Ile Val Asn Thr Arg Phe Glu Gly Ile Lys Cys Leu Tyr Ile
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Leu Tyr Lys Cys Lys His Gly Leu Val Thr Lys
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<210> 35

<211> 1269

<212> DNA

<213> Homo sapiens

<400> 35

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 cttagcagga tgacctggtg tagagcaggg aactgggaaa tgtgggtcag gggatcagac 660
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 ctactaaaaa caacaacaaa aaaggctcat cttttctcag tctgaattga caaaaatgcc 1200
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 aaaaaaaaaa 1269

<210> 36

<211> 100

<212> PRT

<213> Homo sapiens

<400> 36

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 Leu Trp Ile Tyr His Ser Lys Asn Pro Glu Val Asp Asp Ser Ser Ala
 35 40 45
 Gln Lys Gly Trp Trp Phe Leu Ser Trp Phe Asn Asn Gly Ile His Asn
 50 55 60
 Tyr Gln Gln Gly Glu Glu Asp Ile Asp Lys Glu Lys Gly Arg Glu Glu
 65 70 75 80
 Thr Lys Gly Arg Lys Met Thr Gln Gln Ser Phe Gly Tyr Gly Thr Gly
 85 90 95
 Leu Ile Gln Thr
 100

<210> 37
 <211> 232
 <212> DNA
 <213> Homo sapiens

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 agcagcctat ttttcttca ataaaaattg ttaagagaaa aaaaaaaaaa aa 232

<210> 38
 <211> 57
 <212> PRT
 <213> Homo sapiens

<400> 38
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 Ile Leu Lys Thr Ala Val Phe Pro His Phe Val Met Arg Val Trp Gly
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 Trp Gln Gly Leu Val Gly Gly Arg Arg Glu Asp Arg Gly Ala Leu Lys
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 Val Gln Ser Ser Leu Phe Phe Leu Gln
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<210> 39
 <211> 1135
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 catctccctg ggacttcctg ctcacatag taccagtgga gccagagat cctactagac 180
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<210> 40

<211> 54

<212> PRT

<213> Homo sapiens

<400> 40

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Met Lys Phe Gln Leu Leu Asn Leu Leu Pro Tyr Pro Gly Leu Trp Thr
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Gln Thr Gly Leu Glu Pro Gln Ser Leu Phe Pro Ser Ser Pro Ser Ser
  20             25             30

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Pro Cys Gly Leu Pro Gly Leu Ser Ile Cys Tyr Cys Ala Val Leu Gly
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Ile Gly Ala Glu Val Ala
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<210> 41

<211> 4292

<212> DNA

<213> Homo sapiens

<400> 41

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<210> 42

<211> 1369

<212> PRT

<213> Homo sapiens

<400> 42

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 35 40 45
 Asp Tyr Arg Gly Pro Asp Cys Arg Tyr Leu Asn Phe Thr Lys Gly Glu
 50 55 60
 Glu Ile Ser Val Tyr Val Lys Leu Ala Gly Glu Arg Glu Asp Leu Trp
 65 70 75 80
 Ala Gly Ser Lys Gly Lys Glu Phe Gly Tyr Phe Pro Arg Asp Ala Val
 85 90 95
 Gln Ile Glu Glu Val Phe Ile Ser Glu Glu Ile Gln Met Ser Thr Lys
 100 105 110
 Glu Ser Asp Phe Leu Cys Leu Leu Gly Val Ser Tyr Thr Phe Asp Asn
 115 120 125
 Glu Asp Ser Glu Leu Asn Gly Asp Tyr Gly Glu Asn Ile Tyr Pro Tyr
 130 135 140
 Glu Glu Asp Lys Asp Glu Lys Ser Ser Ile Tyr Glu Ser Asp Phe Gln
 145 150 155 160
 Ile Glu Pro Gly Phe Tyr Ala Thr Tyr Glu Ser Thr Leu Phe Glu Asp
 165 170 175
 Gln Val Pro Ala Leu Glu Ala Pro Glu Asp Ile Gly Ser Thr Ser Glu
 180 185 190
 Ser Lys Asp Trp Glu Glu Val Val Val Glu Ser Met Glu Gln Asp Arg
 195 200 205
 Ile Pro Glu Val His Val Pro Pro Ser Ser Ala Val Ser Gly Val Lys
 210 215 220
 Glu Trp Phe Gly Leu Gly Gly Glu Gln Ala Glu Glu Lys Ala Phe Glu
 225 230 235 240
 Ser Val Ile Glu Pro Val Gln Glu Ser Ser Phe Arg Ser Arg Lys Ile
 245 250 255
 Ala Val Glu Asp Glu Asn Asp Leu Glu Glu Leu Asn Asn Gly Glu Pro
 260 265 270
 Gln Thr Glu His Gln Gln Glu Ser Glu Ser Glu Ile Asp Ser Val Pro
 275 280 285
 Lys Thr Gln Ser Glu Leu Ala Ser Glu Ser Glu His Ile Pro Lys Pro
 290 295 300
 Gln Ser Thr Gly Trp Phe Gly Gly Gly Phe Thr Ser Tyr Leu Gly Phe
 305 310 315 320
 Gly Asp Glu Asp Thr Gly Leu Glu Leu Ile Ala Glu Glu Ser Asn Pro
 325 330 335
 Pro Leu Gln Asp Phe Pro Asn Pro Ile Ser Ser Asp Lys Glu Ala Thr
 340 345 350

Val Pro Cys Thr Glu Ile Leu Thr Glu Lys Lys Asp Thr Ile Thr Asn
 355 360 365
 Asp Ser Leu Ser Leu Lys Pro Ser Trp Phe Asp Phe Gly Phe Ala Ile
 370 375 380
 Leu Gly Phe Ala Tyr Ala Lys Glu Asp Lys Ile Met Leu Asp Asp Arg
 385 390 395 400
 Lys Asn Glu Glu Asp Gly Gly Ala Asp Glu His Glu His Pro Leu Thr
 405 410 415
 Ser Glu Leu Asp Pro Glu Lys Glu Gln Glu Ile Glu Thr Ile Lys Ile
 420 425 430
 Ile Glu Thr Glu Asp Gln Ile Asp Lys Lys Pro Val Ser Glu Lys Thr
 435 440 445
 Asp Glu Ser Asp Thr Ile Pro Tyr Leu Lys Lys Phe Leu Tyr Asn Phe
 450 455 460
 Asp Asn Pro Trp Asn Phe Gln Asn Ile Pro Lys Glu Thr Glu Leu Pro
 465 470 475 480
 Phe Pro Lys Gln Ile Leu Asp Gln Asn Asn Val Ile Glu Asn Glu Glu
 485 490 495
 Thr Gly Glu Phe Ser Ile Asp Asn Tyr Pro Thr Asp Asn Thr Lys Val
 500 505 510
 Met Ile Phe Lys Ser Ser Tyr Ser Leu Ser Asp Met Val Ser Asn Ile
 515 520 525
 Glu Leu Pro Thr Arg Ile His Glu Glu Val Tyr Phe Glu Pro Ser Ser
 530 535 540
 Ser Lys Asp Ser Asp Glu Asn Ser Lys Pro Ser Val Asp Thr Glu Gly
 545 550 555 560
 Pro Ala Leu Val Glu Ile Asp Arg Ser Val Glu Asn Thr Leu Leu Asn
 565 570 575
 Ser Gln Met Val Ser Thr Asp Asn Ser Leu Ser Ser Gln Asn Tyr Ile
 580 585 590
 Ser Gln Lys Glu Asp Ala Ser Glu Phe Gln Ile Leu Lys Tyr Leu Phe
 595 600 605
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 645 650 655
 Val Val Gly Phe Phe Ala Val Leu Phe Phe Leu Trp Arg Ser Phe Arg
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 Lys Asp Ala Ser Phe Glu Lys Glu Ala Thr Glu Ala Gln Ser Leu Glu
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 Ile Leu Cys Leu Glu Lys Glu Leu Lys Glu Glu Lys Ser Lys His Ser
 755 760 765
 Glu Gln Asp Glu Leu Met Ala Asp Ile Ser Lys Arg Ile Gln Ser Leu
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 945 950 955 960
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 995 1000 1005

31.

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 Val Asp Glu Lys Ile Ser His Ala Thr Glu Glu Leu Glu Thr Tyr Arg
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 Lys Arg Ala Lys Asp Leu Glu Glu Glu Leu Glu Arg Thr Ile His Ser
 1045 1050 1055
 Tyr Gln Gly Gln Ile Ile Ser His Glu Lys Lys Ala His Asp Asn Trp
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 1075 1080 1085
 Asn Ala His Asn Arg Gln Lys Leu Thr Glu Thr Glu Leu Lys Phe Glu
 1090 1095 1100
 Leu Leu Glu Lys Asp Pro Tyr Ala Leu Asp Val Pro Asn Thr Ala Phe
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 Gly Arg Gly Ser Arg Gly Pro Gly Asn Pro Leu Asp His Gln Ile Thr
 1125 1130 1135
 Asn Glu Arg Gly Glu Ser Ser Cys Asp Arg Leu Thr Asp Pro His Arg
 1140 1145 1150
 Ala Pro Ser Asp Thr Gly Ser Leu Ser Pro Pro Trp Asp Gln Asp Arg
 1155 1160 1165
 Arg Met Met Phe Pro Pro Pro Gly Gln Ser Tyr Pro Asp Ser Ala Leu
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 Pro Pro Gln Arg Gln Asp Arg Phe Cys Ser Asn Ser Gly Arg Leu Ser
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 Gly Pro Ala Glu Leu Arg Ser Phe Asn Met Pro Ser Leu Asp Lys Met
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 Asp Gly Ser Met Pro Ser Glu Met Glu Ser Ser Arg Asn Asp Thr Lys
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 Asp Asp Leu Gly Asn Leu Asn Val Pro Asp Ser Ser Leu Pro Ala Glu
 1235 1240 1245
 Asn Glu Ala Thr Gly Pro Gly Phe Val Pro Pro Pro Leu Ala Pro Ile
 1250 1255 1260
 Arg Gly Pro Leu Phe Pro Val Asp Ala Arg Gly Pro Phe Leu Arg Arg
 1265 1270 1275 1280
 Gly Pro Pro Phe Pro Pro Pro Pro Pro Gly Ala Met Phe Gly Ala Ser
 1285 1290 1295
 Arg Asp Tyr Phe Pro Pro Arg Asp Phe Pro Gly Pro Pro Pro Ala Pro
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 Phe Ala Met Arg Asn Val Tyr Pro Pro Arg Gly Phe Pro Pro Tyr Leu
 1315 1320 1325

32.

Pro Pro Arg Pro Gly Phe Phe Pro Pro Pro Pro His Ser Glu Gly Arg
1330 1335 1340

Ser Glu Phe Pro Ser Gly Leu Ile Pro Pro Ser Asn Glu Pro Ala Thr
1345 1350 1355 1360

Glu His Pro Glu Pro Gln Gln Glu Thr
1365

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<211> 412
<212> DNA
<213> Homo sapiens

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<210> 44
<211> 49
<212> PRT
<213> Homo sapiens

<400> 44
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Arg Pro Gly Pro Val Pro Ser Cys Ser Leu Val Leu Leu Thr Pro Leu
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Ala Pro Leu Pro Leu Thr Ala Arg Glu Ser Leu Cys Pro Cys Pro Pro
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Ser

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<211> 1317
<212> DNA
<213> Homo sapiens

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<210> 46
 <211> 48
 <212> PRT
 <213> Homo sapiens

<400> 46
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 35 40 45

<210> 47
 <211> 1442
 <212> DNA
 <213> Homo sapiens

<400> 47
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<210> 48
 <211> 247
 <212> PRT
 <213> Homo sapiens

<400> 48
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 35 40 45
 Trp Leu Ser Ser Ser Phe Pro Ala Tyr Met Ser Lys Thr Gln Cys Tyr
 50 55 60
 His Thr Ser Pro Cys Ser Phe Lys Lys Gln Gln Lys Gln Ala Leu Leu
 65 70 75 80
 Ala Arg Pro Ser Ser Thr Ile Thr Tyr Leu Thr Asp Ser Pro Lys Pro
 85 90 95
 Ala Leu Cys Val Thr Leu Ala Gly Leu Ile Pro Phe Val Ala Pro Pro
 100 105 110
 Leu Val Met Leu Met Thr Lys Thr Tyr Ile Pro Ile Leu Ala Phe Thr
 115 120 125
 Gln Met Ala Tyr Gly Ala Ser Phe Leu Ser Phe Leu Gly Gly Ile Arg
 130 135 140
 Trp Gly Phe Ala Leu Pro Glu Gly Ser Pro Ala Lys Pro Asp Tyr Leu
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 Asn Leu Ala Ser Ser Ala Ala Pro Leu Phe Phe Ser Trp Phe Ala Phe
 165 170 175
 Leu Ile Ser Glu Arg Leu Ser Glu Ala Ile Val Thr Val Ile Met Gly
 180 185 190
 Met Gly Val Ala Phe His Leu Glu Leu Phe Leu Leu Pro His Tyr Pro
 195 200 205
 Asn Trp Phe Lys Ala Leu Arg Ile Val Val Thr Leu Leu Ala Thr Phe
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<210> 49

<211> 2696

<212> DNA

<213> Homo sapiens

<400> 49

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<210> 50

<211> 73

<212> PRT

<213> Homo sapiens

<400> 50

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Met Asn Ser Phe Ala Tyr His Ser His Pro Pro Leu Gly Ser Arg Phe
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Leu Gln Thr His Ser Leu Glu Ser Gly Ser Gln Ser Ala Gly Ser Arg
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Thr Pro Leu Thr Gln Thr His Leu Arg Arg Leu Gly Leu Leu Lys Ser
      35             40             45

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Val Cys Leu Gly Cys Leu Cys Asn Asn Pro Ser Leu Phe Ile Phe Leu
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Gly Asp Pro Leu Pro Ser Gln Pro Gly
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<210> 51
<211> 2791
<212> DNA
<213> Homo sapiens

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<210> 52
<211> 219
<212> PRT
<213> Homo sapiens

<400> 52

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 35 40 45
 Arg Phe Arg Phe Leu Ser Pro Gly Leu Ile Ser Phe Thr Lys Val Ser
 50 55 60
 Val Val Met Leu Pro Glu Pro Arg His Pro Thr Gly Trp Gly Ile Glu
 65 70 75 80
 Asp Glu Gly Ser Met Leu Gly Ser Phe Ala Pro Met Leu His Phe Pro
 85 90 95
 Arg Pro Thr Tyr Pro Ile Arg Met Gly Ser Gly Ser Leu Asn Pro Ser
 100 105 110
 Asn Pro Ser Lys Arg Leu Lys Lys Asn Ile Pro Gly Gly Leu Gln Leu
 115 120 125
 Gln Asp Gln Asn Leu Gly Val Ser Gly Gln Ala Ala Leu Gly Leu Glu
 130 135 140
 Gly Pro Leu Pro Gly Cys Ser Phe Ser Leu Lys Pro Arg Ser Gly Gly
 145 150 155 160
 Ala Asp Val Asp Arg Gly Arg Glu Pro Gly Ala Gln Pro Gly Ser Arg
 165 170 175
 Ile Leu Leu Ala Arg Ser Ser Gly Thr Leu Ile Pro Thr Ser Arg Asp
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 Pro Ala Gly Leu Cys Arg Gly Trp Lys Leu Leu
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<210> 53

<211> 1527

<212> DNA

<213> Homo sapiens

<400> 53

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<210> 54

<211> 122

<212> PRT

<213> Homo sapiens

<400> 54

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  1              5              10              15
Asp Ser Glu Met Val Glu Met Ala Gln Lys Leu Gly Ala Ala Leu Gln
      20              25              30
Val Gly Glu Ala Leu Val Trp Thr Lys Pro Val Lys Asp Pro Lys Ser
      35              40              45
Lys His Gln Thr Thr Ser Thr Ser Lys Pro Ala Ser Phe Gln Gln Pro
      50              55              60
Leu Gly Ser Asn Gln Ala Leu Gly Gln Ala Met Ser Ser Ala Ala Ala
      65              70              75              80
Tyr Arg Thr Leu Pro Ser Gly Ala Gly Gly Thr Ser Gln Phe Thr Lys
      85              90              95
Pro Pro Ser Leu Pro Leu Glu Pro Glu Pro Ala Val Glu Ser Ser Pro
      100              105              110
Thr Glu Thr Ser Glu Gln Ile Arg Glu Lys
      115              120

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<210> 55

<211> 2352

<212> DNA

<213> Homo sapiens

<400> 55

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agcagagtga gctgaagctc ctgaggaggg ttcccgaagg ggggcgctca gagatggggg 60
cagggggcgg ggagaggaga gtctgcctta tgtcccttcc ttgtggactt cacatgggtca 120
tgcaggaagt gaggatgggt gtccagcggg ggccgaggcc actagtatcc tcctgcttcc 180
ccctgccatt ctccagggtt ggactgaccc tatggactgg gagagagtgc ctgaggccac 240
catgccacag tcaaaggggg tcctatctca gaaggtggca gcatccactg agatatactc 300
acccgaaggg aaggaggctg ctgggtagca aataagcccc ttcttttctt ggtgagttga 360
tgacctcaa tagctccag tgcatgggt acccagtagc cattagctgg tggtgggttg 420
attgagacct ggggcagttc ctggggcaag aagccagatg ggagatgaga tagaaagtgt 480
taggagttat cctctttgcc tggcctttga gaataactta ctgtgtgact ttgggcaagt 540
tccttcccca ctctgggcct cagtttctca cttgggaaag caaggagttt gaccagatga 600

```

```

tcacaatggg ccttcctagc tctggccacc aagaatttgt gaacattaga gctcctgggc 660
tggtgggtag agccagagct gctgactggg ctctctgcct ccagagggga tttattggac 720
ctcagaggtg gcagggccct atggagcacc aactgccctc aacccacccc tgtgcccagg 780
actgggaagg gattgatgtc aggctgtggc cataggtagc atgagttgcc caaggaggga 840
cagagcatat ctttgctgag gcttggtga ggggcttatg atagggttg cagtacctca 900
cagccccctg tgggcacaga caccctgagg ttaccocagg caaatatatt gattagcagg 960
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agctggggggc tgtcgtacta cctgtccag tcttgagggc ctagttgcag gtccccagg 1260
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tcaacatcac gctcaccctt ttgggttttag cccagtgtta tttagcaaat ttctccagct 1560
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gctgggatta cagggtgtgag ccaccatgcc tggcctcact gtgtagttgt gaatagctta 2160
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ctggtacagt tttatgcttt gtggtgtggc ttttaatttt tataaacatg tcttactgct 2280
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aaaaaaaaaa aa 2352

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<210> 56

<211> 169

<212> PRT

<213> Homo sapiens

<400> 56

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Met Lys Cys Trp Ser Asn Ala Trp Gln Thr Tyr Ala Leu Gln Cys Leu
  1             5             10             15

```

```

Leu Lys Pro Leu Gly Leu Thr Gln Asp Pro Leu Val Phe Gly Met Thr
  20             25             30

```

```

Ser Phe Leu Gln Thr Ser Ser Pro Ile Pro Asn Ser Cys Met Glu Asn
  35             40             45

```

```

Val Cys Gln Ala Gly Phe Pro Ser Leu Leu His Leu Asn Ile Thr Leu
  50             55             60

```

```

Thr Leu Leu Gly Leu Ala Gln Cys Tyr Leu Ala Asn Phe Ser Ser Cys
  65             70             75             80

```

```

Arg Glu Gly Ser Glu His Tyr Leu Phe Phe Phe Phe Phe Ser Trp Ser
  85             90             95

```

```

Gln Asp Cys Thr Arg Gln Trp Pro Asn Leu Val Glu Phe Ser Leu Pro
  100            105            110

```

```

Ser Phe Ala Asp Asp Ser Ala Leu Cys Gln Val Leu Glu Pro Gln Arg
  115            120            125

```

Trp Val Ser Pro Ser Pro Cys Pro Gln Glu Ala His Gly Gln Gly Asn
 130 135 140

Val Val Gly Ile Ser Asn Arg Gly Gln Leu Pro Ser Gly Leu Leu Val
 145 150 155 160

Ala Ala Gly Pro Tyr Gly Ala Leu Met
 165

<210> 57
 <211> 995
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> (852)

<400> 57
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 gtgagccaag atcgaccac tgcaactccag cctgggtgac agagcgagac tctgtctcaa 180
 aaaaaaaaaa aaaaaagaaa agaaaaaaaaac ctattgccta cctccaagg gcaaatgcag 240
 cctgggtgtt ggctccaagt ctgcttcagc tttgggtccc atcactccgc tttccttttg 300
 cctcaactta agatcttgcc acatgtacac ttcccataac attccagctg agaggctttt 360
 gtatacgagg ggtttttttt tgtttgttt gccwagaatg atcctccctg gtgaatctta 420
 gcttaaatac ccaggcagtt aagcaggcct ttctctatga tttcaccctt actttgtata 480
 tttctgtgat tagtctgaa catcccatgt tgtactgttt acctctctca ctggacttag 540
 aaattctgaa gaacagaaac aaaaagtttt ctctttctct gtatgttctt tttttgttgt 600
 tattattatt gacttggtat atcttctttc agatgtattt tcttttattc tcaacacaaa 660
 gtaattttta catgatcttt ctggggccaaa attttcttat ctgtaaaatg aagatgttgg 720
 actaggattc agggcttctt aactaaagaa ttcaatagat gatgctggga caagtgtata 780
 tctacctgta aaggaatgaa gttggacccc ttctcctac tacaacaaa aattaactca 840
 aaatggatca tngacctaaa cataagagct aaaactataa gactttcaga agaaaacaca 900
 ggagtaagtc ttcacgacct tggattaagg aatgggtgct tagatatgac acccaaaaaa 960
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 995

<210> 58
 <211> 72
 <212> PRT
 <213> Homo sapiens

<400> 58
 Met Leu Tyr Cys Leu Pro Leu Ser Leu Asp Leu Glu Ile Leu Lys Asn
 1 5 10 15
 Arg Asn Lys Lys Phe Ser Leu Ser Leu Tyr Val Leu Phe Leu Leu Leu
 20 25 30
 Leu Leu Leu Thr Trp Tyr Ile Phe Phe Gln Met Tyr Phe Leu Leu Phe
 35 40 45
 Ser Thr Gln Ser Asn Phe Asn Met Ile Phe Leu Gly Gln Asn Phe Leu
 50 55 60
 Ile Cys Lys Met Lys Met Leu Asp
 65 70

<210> 59
 <211> 1038

<212> DNA

<213> Homo sapiens

<400> 59

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gacggcctca ccatgatgaa acgggcagct gctgctgcag tgggaggagg taagttaccc 60
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gatgaggcgc tgggctggct ctcaccctcc acttccgaag ctgcccagat agcctgagtg 180
agccacagca tcaaaatact ccagggaata gctcactccc attcctgacc cagcttctct 240
tctagtcctt atgtcgaata agcataggag gaagatcgtt tgaaagarga tttgcagcta 300
aactccacgt ggcttatttc acatttatgc gtggacacac acacacacac acacacacac 360
acacaaattt gagaccaatg aagggtattg acttcctcag catcacacag caagttagag 420
acaaaccagg gccatggctg gtccttctat gacatctttg cttcacctgg ctccacactc 480
caccttttct tcaccagaag accactaagt tgccatctct gtattgctca agctgacagt 540
ctccggaaac tgtcaaggaa ttcttaagcg gggggcgggg ggaagggtcc cttctcctga 600
gcccacctct gcactcagct tctctctccc acagccctgg cagtgggggc tgtgcccgtg 660
gtgctcagtg ccatgggctt cactggggca ggaatcgccg cgtcctccat agcagccaag 720
atgatgtccg cagcagccat tgccaacggg ggtggtgttt ctgccccgag cctggtggtt 780
actctgcagt ccgtgggggc agctggactc tccacatcat ccaacatcct cctggcctct 840
gttgggtcag tgtkgggggc ctgctkgggg aattcactt cttcttctct cccagctgaa 900
cccagggcta aagaagatga ggcaagagaa aatgtacccc aagggtgaacc tccaaaaccc 960
ccactcaagt cagagaaaca tgaggaataa aggtcacatg cagatgcata aaaaaaaaaa 1020
aaaaaaaaaa aaaaaaaaaa                                     1038

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<210> 60

<211> 105

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (61)

<220>

<221> UNSURE

<222> (65)

<400> 60

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Met Gly Phe Thr Gly Ala Gly Ile Ala Ala Ser Ser Ile Ala Ala Lys
 1             5             10             15
Met Met Ser Ala Ala Ala Ile Ala Asn Gly Gly Gly Val Ser Ala Gly
 20             25             30
Ser Leu Val Ala Thr Leu Gln Ser Val Gly Ala Ala Gly Leu Ser Thr
 35             40             45
Ser Ser Asn Ile Leu Leu Ala Ser Val Gly Ser Val Xaa Gly Ala Cys
 50             55             60
Xaa Gly Asn Ser Pro Ser Ser Ser Leu Pro Ala Glu Pro Glu Ala Lys
 65             70             75             80
Glu Asp Glu Ala Arg Glu Asn Val Pro Gln Gly Glu Pro Pro Lys Pro
 85             90             95
Pro Leu Lys Ser Glu Lys His Glu Glu
 100             105

```

<210> 61

<211> 1060

<212> DNA

<213> Homo sapiens

<400> 61

```

gaggagacca ggacagctgc tgagacctct aagaagtcca gataactaaga gcaaagatgt 60
ttcaaactgg gggcctcatt gtcttctacg ggctgttagc ccagaccatg gccagtttg 120
gaggcctgcc cgtgccccctg gaccagacct tgccttgaa tgtgaatcca gccctgccct 180
tgagtcccac aggtcttgca ggaagcttga caaatgccct cagcaatggc ctgctgtctg 240
ggggcctggt gggcattctg gaaaaccttc cgctcctgga catcctgaag cctggaggag 300
gtacttctgg tggcctcctt gggggactgc ttggaaaagt gacgtcagt attcctggcc 360
tgaacaacat cattgacata aaggctactg acccccagct gctggaactt ggccttgtgc 420
agagccctga tggccaccgt ctctatgtca ccatccctct cggcataaag ctccaagtga 480
atacgccccct ggtcggtgca agtctgttga ggctggctgt gaagctggac atcactgcag 540
aaatcttagc tgtgagagat aagcaggaga ggatccacct ggtccttggg gactgcaccc 600
attcccctgg aagcctgcaa atttctctgc ttgatggact tggccccctc cccattcaag 660
gtcttcttga cagcctcaca gggatcttga ataaagtcct gcctgagttg gttcagggca 720
acgtgtgccc tctgggtcaat gaggttctca gaggcttggg catcaccctg gtgcatgaca 780
ttgttaacat gctgatccac ggactacagt ttgtcatcaa ggtctaagcc ttccaggaag 840
gggctggcct ctgctgagct gaactatttc ttgctgctca atccatttcc tctggcccag 900
cttcccagtg ctcacagatg gctggcccat gtgctggaag atgacacagt tgccttctct 960
ccgaggaacc tgccccctct cctttccac caggcgtgtg taacatccca tgtgcctcac 1020
ctaataaaat ggctcttctt ctgcaaaaaa aaaaaaaaaa 1060

```

<210> 62

<211> 256

<212> PRT

<213> Homo sapiens

<400> 62

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Met Phe Gln Thr Gly Gly Leu Ile Val Phe Tyr Gly Leu Leu Ala Gln
 1             5             10             15

Thr Met Ala Gln Phe Gly Gly Leu Pro Val Pro Leu Asp Gln Thr Leu
 20             25             30

Pro Leu Asn Val Asn Pro Ala Leu Pro Leu Ser Pro Thr Gly Leu Ala
 35             40             45

Gly Ser Leu Thr Asn Ala Leu Ser Asn Gly Leu Leu Ser Gly Gly Leu
 50             55             60

Leu Gly Ile Leu Glu Asn Leu Pro Leu Leu Asp Ile Leu Lys Pro Gly
 65             70             75             80

Gly Gly Thr Ser Gly Gly Leu Leu Gly Gly Leu Leu Gly Lys Val Thr
 85             90             95

Ser Val Ile Pro Gly Leu Asn Asn Ile Ile Asp Ile Lys Val Thr Asp
100             105             110

Pro Gln Leu Leu Glu Leu Gly Leu Val Gln Ser Pro Asp Gly His Arg
115             120             125

Leu Tyr Val Thr Ile Pro Leu Gly Ile Lys Leu Gln Val Asn Thr Pro
130             135             140

Leu Val Gly Ala Ser Leu Leu Arg Leu Ala Val Lys Leu Asp Ile Thr
145             150             155             160

Ala Glu Ile Leu Ala Val Arg Asp Lys Gln Glu Arg Ile His Leu Val
165             170             175

```

Leu Gly Asp Cys Thr His Ser Pro Gly Ser Leu Gln Ile Ser Leu Leu
180 185 190

Asp Gly Leu Gly Pro Leu Pro Ile Gln Gly Leu Leu Asp Ser Leu Thr
195 200 205

Gly Ile Leu Asn Lys Val Leu Pro Glu Leu Val Gln Gly Asn Val Cys
210 215 220

Pro Leu Val Asn Glu Val Leu Arg Gly Leu Asp Ile Thr Leu Val His
225 230 235 240

Asp Ile Val Asn Met Leu Ile His Gly Leu Gln Phe Val Ile Lys Val
245 250 255

<210> 63

<211> 992

<212> DNA

<213> Homo sapiens

<400> 63

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gcagaatggg gctctgggtct ctgggcattc atttccctca tagaggctga gaataaaaca 60
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ttctcaacct tgacaccatt gacatttttg actgggtaat tctttgttct gcagagctgt 180
cctttgcact gtaggagatt tactaatatc cctggcctct acccagtagt accactagca 240
cctattcccc acccagcgtg tctccagata ttgtcaaata tcccatcggg tgcaaaatga 300
tccctgggtca agatctgttg cccaagatgt tacaggtcac aatgaccaca tttgaaattg 360
tttccctttt cattttaccc tgtgaaagca tctctcctag agccttgcaa gaggcagggtg 420
acattgtgtc catattttctt cctgtttcag aacttctgtt tcacaacaat ttctctctcg 480
ctacaagtat tctttcactc agcactgggg aagttgggaa cagctgggtca ccacatccc 540
tttaatcaac tcacacctgt ttaaagagtgt tttctgattt gaccttcac ccttagttta 600
ctgggggttaa aaaaagtctc agcaattttc attatttctc gtgggtctca ttatcaaacc 660
ttactttatt tgggcataatt tctctggggc ttcttctagt ttctgcctta caagcaatgc 720
tgttctgtaa atttattgaa aactctggaa catttcacct ttagagatgg aggatggaag 780
gattggtacc agaagagggc taagatacgt tttctgtctt gagctgaaag cacagtctac 840
tctccttcgt tttgtcgatg agaaagttga ggccagaggg gaggtgacat gtttagagtc 900
accagctgg ttagtgacag aaaaagcgtg agagttgtct aggattcctg ccactttcaa 960
taaagacctg acttggaaaa aaaaaaaaaa aa 992
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<210> 64

<211> 82

<212> PRT

<213> Homo sapiens

<400> 64

Met Ile Pro Gly Gln Asp Leu Leu Pro Lys Met Leu Gln Val Thr Met
1 5 10 15

Thr Thr Phe Glu Ile Val Phe Pro Phe Ile Leu Pro Cys Glu Ser Ile
20 25 30

Ser Pro Arg Ala Leu Gln Glu Ala Gly Asp Ile Val Ser Ile Phe Leu
35 40 45

Pro Val Ser Glu Leu Leu Phe His Asn Asn Phe Ser Leu Ala Thr Ser
50 55 60

Ile Leu Ser Leu Ser Thr Gly Glu Val Gly Asn Ser Trp Ser Pro Ser
65 70 75 80

Ser Leu

44

<210> 65
 <211> 1095
 <212> DNA
 <213> Homo sapiens

<400> 65
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 gagatttcct gttgaagctc tcaagtgttt ccatctgcag aaaaaaacca gactttctgc 120
 ctgatcatcc cattgtactg caaaaaccag aaaacaacca aagttttaag tagcatttta 180
 agaacagatg aatttaagtt tggacatctg caaatgaggt ggatctagca acaataactg 240
 taatggactg tgacaattca atttattctt aattttgatg gttggctatt tgacttctct 300
 aaaaatgaga aagagctatt ttaaaatata aagaattttc taatcagttt cagctttgca 360
 ggaggtttcc tgcataaatt gggaagtaac actggaaagt aggaatttgg ttagtgaagt 420
 gggaagactg tatatttata atttgcatac tacttgcaat tttttgtttt tcatcacttg 480
 taataatgga atggaaatgt aagctgtaaa gactctcaaa tataaaatat ttgctacagt 540
 gtatatatgg tacataattg cttgttgctt ttaaagttcc ttctgttggt ctgcttccca 600
 ctgatttcat accagctcat gaatggatca ttacagtctc tccagaggct tagaatgatt 660
 cagaatgttc aatgcatagt tctcaataaa caggaggcag aatttttaat gggatatttct 720
 tttcagatat atgattggct tctaggtttt tgataataat atgggtcttaa attcataatt 780
 actagcagag attgataatt tggaaacaat ggtagtgaat gaaactgaag ttgaaaaacg 840
 gctgctactt atgtcactaa tcagaccata tgaatagcag aagttgagca atttcaaagt 900
 aaaactgata tttttatttc caaaggaatt tagacatttg aaaataattg acatacatta 960
 agttttaatt cgataatttc ttatatatgg atgaacaatt tttgggttta agcttttaat 1020
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 aaaaaaaaaa aaaaaa 1095

<210> 66
 <211> 68
 <212> PRT
 <213> Homo sapiens

<400> 66
 Met Val His Asn Cys Leu Leu Leu Leu Lys Phe Leu Leu Leu Phe Cys
 1 5 10 15
 Phe Pro Leu Ile Ser Tyr Gln Leu Met Asn Gly Ser Leu Gln Ser Leu
 20 25 30
 Gln Arg Leu Arg Met Ile Gln Asn Val Gln Cys Ile Val Leu Asn Lys
 35 40 45
 Gln Glu Ala Glu Phe Leu Met Gly Ile Ser Phe Gln Ile Tyr Asp Trp
 50 55 60
 Ser Leu Gly Phe
 65

<210> 67
 <211> 831
 <212> DNA
 <213> Homo sapiens

<400> 67
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 cctgggaaag aggggctgag gcctgaactg ggcctaagga gagtgcagct cagttcgcac 180
 acaacagcac ccagccctgt ccccttgctg cctctacca gccctgggca gttccctcaa 240
 cagagctctg cagccccaag tggcagctgc tggctcaaag ctgggactac atgaaagtct 300
 gaaaagagaa tgagaaggag gtggcgcaag agcctggacg cacgtgtggg aggccgtttt 360
 gtgcagcgct attgtgctcc ccgggcgggc atgtkctcgc gctccgtggc tctgttggtg 420


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cccarcgtgc ggggggtgtgc tkgtggccct gtgggcctgt agggcaaccc atgccaaactg 480
cggaaaagta accagcacca tacaccccc ccaacacaaa actgggcatt tatttttttt 540
gttggtcattg ttattaggaa gcaaaaaaat gtacagttac aagaatcatt ttccaaacag 600
aggttaaata tgagctgaaa agtgtaaaaa aggaagagga acatcacttt acaaatcatt 660
aaattaaaca aataaacaaa cagaacccaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 720
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 780
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a          831

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<210> 68
 <211> 50
 <212> PRT
 <213> Homo sapiens

<220>
 <221> UNSURE
 <222> (29)

<220>
 <221> UNSURE
 <222> (39)

<220>
 <221> UNSURE
 <222> (45)

<400> 68
 Met Arg Arg Arg Trp Arg Lys Ser Leu Asp Ala Arg Val Gly Gly Arg
 1 5 10 15

Phe Val Gln Arg Tyr Cys Ala Pro Arg Ala Gly Met Xaa Ser Arg Ser
 20 25 30

Val Ala Leu Leu Val Pro Xaa Val Arg Gly Cys Ala Xaa Gly Pro Val
 35 40 45

Gly Leu
 50

<210> 69
 <211> 1893
 <212> DNA
 <213> Homo sapiens

<400> 69
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 ggaggcagga gccttcctta cacttcgccca tgagtttcct catcgactcc agcatcatga 120
 ttacctccca ratactattt tttggatttg ggtggctttt cttcatgcgc caattgttta 180
 aagactatga ratacgtcag tatgttgtac aggtgatctt ctccgtgacg tttgcatttt 240
 cttgcaccat gtttgagctc atcatctttg aaatcttagg agtattgaat agcagctccc 300
 gttattttca ctggaaaatg aacctgtgtg taattctgct gatcctgggt ttcattgggtgc 360
 ctttttacat tggctatttt attgtgagca atatccgact actgcataaa caacgactgc 420
 ttttttcctg tctcttatgg ctgaccttta tgtatttctt ctggaaacta ggagatccct 480
 ttcccattct cagcccaaaa catgggatct tatccataga acagctcatc agccgggttg 540
 gtgtgatttg agtgactctc atggctcttc tttctggatt tgggtgctgc aactgccccat 600
 acacttacat gtcttacttc ctcaggaatg tgactgacac ggatattcta gccctggaac 660
 ggcgactgct gcaaaccatg gatatgatca taagcaaaaa gaaaaggatg gcaatggcac 720
 ggagaacaat gttccagaag ggggaagtgc ataacaaacc atcaggtttc tggggaatga 780
 taaaaagtgt taccacttca gcatcaggaa gtgaaaatct tactcttatt caacaggaag 840
 tggatgcttt ggaagaatta agcaggcagc tttttctgga aacagctgat ctatatgcta 900
 ccaaggagag aatagaatac tccaaaacct tcaaggggaa atatttaatt tcttgggttac 960
 tttttctcta tctactgtgt ttggaaaatt ttcattgaata ccatcaatat tgtatttgat 1020

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cgagttggga aaacgggatcc tgtcacaaga ggcattgaga tcaactgtgaa ttatctggga 1080
atccaatttg atgtgaagtt ttggteccaa cacatttcct tcattcttgt tggaataatc 1140
atcgtcacat ccatcagagg attgctgac actcttacca agttctttta tgccatctct 1200
agcagtaagt cctccaatgt cattgtcctg ctattagcac agataatggg catgtacttt 1260
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gaagtccttg gagaactgca gttcaacttc tatcacggtt ggtttgatgt gatcttcctg 1380
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<210> 70

<211> 309

<212> PRT

<213> Homo sapiens

<400> 70

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Met Ser Phe Leu Ile Asp Ser Ser Ile Met Ile Thr Ser Gln Ile Leu
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Phe Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe Lys Asp
 20             25             30

```

```

Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser Val Thr Phe
 35             40             45

```

```

Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe Glu Ile Leu Gly
 50             55             60

```

```

Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp Lys Met Asn Leu Cys
 65             70             75             80

```

```

Val Ile Leu Leu Ile Leu Val Phe Met Val Pro Phe Tyr Ile Gly Tyr
 85             90             95

```

```

Phe Ile Val Ser Asn Ile Arg Leu Leu His Lys Gln Arg Leu Leu Phe
100             105             110

```

```

Ser Cys Leu Leu Trp Leu Thr Phe Met Tyr Phe Phe Trp Lys Leu Gly
115             120             125

```

```

Asp Pro Phe Pro Ile Leu Ser Pro Lys His Gly Ile Leu Ser Ile Glu
130             135             140

```

```

Gln Leu Ile Ser Arg Val Gly Val Ile Gly Val Thr Leu Met Ala Leu
145             150             155             160

```

```

Leu Ser Gly Phe Gly Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr
165             170             175

```

```

Phe Leu Arg Asn Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg
180             185             190

```

```

Leu Leu Gln Thr Met Asp Met Ile Ile Ser Lys Lys Lys Arg Met Ala
195             200             205

```

47

Met Ala Arg Arg Thr Met Phe Gln Lys Gly Glu Val His Asn Lys Pro
 210 215 220

Ser Gly Phe Trp Gly Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly
 225 230 235 240

Ser Glu Asn Leu Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu Glu
 245 250 255

Leu Ser Arg Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala Thr Lys
 260 265 270

Glu Arg Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr Leu Ile Ser
 275 280 285

Trp Leu Leu Phe Leu Tyr Leu Leu Cys Leu Glu Asn Phe His Glu Tyr
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His Gln Tyr Cys Ile
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<210> 71
 <211> 1424
 <212> DNA
 <213> Homo sapiens

<400> 71
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<210> 72
 <211> 70
 <212> PRT
 <213> Homo sapiens

<400> 72
 Met Thr Ser Glu His Ala Thr Leu Arg Ser Leu Ser Ala Leu Pro Thr
 1 5 10 15

48.

Phe Pro Asn Pro Ala Val Ser Thr Pro Gly Leu Trp Arg Leu Tyr Arg
 20 25 30

Tyr Glu Met Gln Arg Ala Cys Gly Leu Gly Val Ser Val Val Trp Gly
 35 40 45

Cys Gly Gly Ser Pro Val Trp His Gly Cys Glu Gly Ala Val Glu Asp
 50 55 60

Arg Leu Ser Val Leu Pro
 65 70

<210> 73

<211> 1726

<212> DNA

<213> Homo sapiens

<400> 73

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<210> 74

<211> 133

<212> PRT

<213> Homo sapiens

<400> 74

Met Val Ser Ser Trp Pro Ala Arg Lys Ala Ser Leu Leu Cys Val Cys
 1 5 10 15

Ala Val Leu Val Leu Pro Trp Arg Thr Leu Gly Ser Pro Val Ile Leu
 20 25 30

49.

Ala Arg Arg Pro Gly Ala Trp Val Pro Ser Trp Lys Gly Thr Ser Tyr
 35 40 45

Thr Pro Gln Pro His Phe Pro Thr Asn Phe Tyr Met Pro Trp Glu Asn
 50 55 60

Leu Leu His Val Gly Cys Pro Leu Pro Leu Phe Gln Gln Cys Pro Val
 65 70 75 80

Leu Leu Ile Asn Leu Arg Pro Ala Pro His Thr Leu Pro Cys Ala Ser
 85 90 95

Ala Ser Arg Tyr Ser Arg Gln Pro Asn Val Val Glu Ala Arg Trp Ile
 100 105 110

Pro Gly Ser Ser Trp Pro Met Asp Val Ser His His Ser Ile Leu Glu
 115 120 125

Thr Glu Lys Arg Ser
 130

<210> 75
 <211> 927
 <212> DNA
 <213> Homo sapiens

<400> 75
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 ttcttcaaat ccaaaaaaaaa aaaaaaa 927

<210> 76
 <211> 142
 <212> PRT
 <213> Homo sapiens

<400> 76
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 1 5 10 15

Pro Arg Ser Gln Pro Ile Asn Leu Asn His Tyr Ala Thr Lys Lys Ser
 20 25 30

Val Ala Glu Ser Met Leu Asp Val Ala Leu Phe Met Ser Asn Ala Met
 35 40 45

Arg Leu Lys Ala Val Leu Glu Gln Gly Pro Ser Ser His Tyr Tyr Thr
 50 55 60

50.

Thr Leu Val Thr Leu Ile Ser Leu Ser Leu Leu Leu Gln Val Val Ile
 65 70 75 80

Gly Val Leu Leu Val Val Ile Ala Arg Leu Asn Leu Asn Glu Val Glu
 85 90 95

Lys Gln Trp Arg Leu Asn Gln Leu Asn Asn Ala Ala Thr Ile Leu Val
 100 105 110

Phe Phe Thr Val Val Ile Asn Val Phe Ile Thr Ala Phe Gly Ala His
 115 120 125

Lys Thr Gly Phe Leu Ala Ala Arg Ala Ser Arg Asn Pro Leu
 130 135 140

<210> 77
 <211> 1660
 <212> DNA
 <213> Homo sapiens

<400> 77
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<210> 78
 <211> 447
 <212> PRT
 <213> Homo sapiens

<400> 78
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51,

Ile Leu Cys Leu Leu Glu Met Ser Phe Ala Val Pro Phe Phe Pro Gln
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 Gln Ser Gly Thr Pro Gly Met Ala Ser Leu Ser Leu Glu Thr Met Arg
 35 40 45
 Gln Leu Gly Ser Leu Gln Arg Leu Asn Thr Leu Ser Gln Tyr Ser Arg
 50 55 60
 Tyr Gly Phe Gly Lys Ser Phe Asn Ser Leu Trp Met His Gly Leu Leu
 65 70 75 80
 Pro Pro His Ser Ser Leu Pro Trp Met Arg Pro Arg Glu His Glu Thr
 85 90 95
 Gln Gln Tyr Glu Tyr Ser Leu Pro Val His Pro Pro Pro Leu Pro Ser
 100 105 110
 Gln Pro Ser Leu Lys Pro Gln Gln Pro Gly Leu Lys Pro Phe Leu Gln
 115 120 125
 Ser Ala Ala Ala Thr Thr Asn Gln Ala Thr Ala Leu Lys Glu Ala Leu
 130 135 140
 Gln Pro Pro Ile His Leu Gly His Leu Pro Leu Gln Glu Gly Glu Leu
 145 150 155 160
 Pro Leu Val Gln Gln Gln Val Ala Pro Ser Asp Lys Pro Pro Lys Pro
 165 170 175
 Glu Leu Pro Gly Val Asp Phe Ala Asp Pro Gln Gly Pro Ser Leu Pro
 180 185 190
 Gly Met Asp Phe Pro Asp Pro Gln Gly Pro Ser Leu Pro Gly Leu Asp
 195 200 205
 Phe Ala Asp Pro Gln Gly Ser Thr Ile Phe Gln Ile Ala Arg Leu Ile
 210 215 220
 Ser His Gly Pro Met Pro Gln Asn Lys Gln Ser Pro Leu Tyr Pro Gly.
 225 230 235 240
 Met Leu Tyr Val Pro Phe Gly Ala Asn Gln Leu Asn Ala Pro Ala Arg
 245 250 255
 Leu Gly Ile Met Ser Ser Glu Glu Val Ala Gly Gly Arg Glu Asp Pro
 260 265 270
 Met Ala Tyr Gly Ala Met Phe Pro Gly Phe Gly Gly Met Arg Pro Gly
 275 280 285
 Phe Glu Gly Met Pro His Asn Pro Ala Met Gly Gly Asp Phe Thr Leu
 290 295 300
 Glu Phe Asp Ser Pro Val Ala Ala Thr Lys Gly Pro Glu Asn Glu Glu
 305 310 315 320
 Gly Gly Ala Gln Gly Ser Pro Met Pro Glu Ala Asn Pro Asp Asn Leu
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 Glu Asn Pro Ala Phe Leu Thr Glu Leu Glu Pro Ala Pro His Ala Gly
 340 345 350

Leu Leu Ala Leu Pro Lys Asp Asp Ile Pro Gly Leu Pro Arg Ser Pro
 355 360 365
 Ser Gly Lys Met Lys Gly Leu Pro Ser Val Thr Pro Ala Ala Ala Asp
 370 375 380
 Pro Leu Met Thr Pro Glu Leu Ala Asp Val Tyr Arg Thr Tyr Asp Ala
 385 390 395 400
 Asp Met Thr Thr Ser Val Asp Phe Gln Glu Glu Ala Thr Met Asp Thr
 405 410 415
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 Gln Glu Pro Glu Met Met His Asp Ala Trp His Phe Gln Glu Pro
 435 440 445

<210> 79

<211> 2036

<212> DNA

<213> Homo sapiens

<400> 79

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<210> 80

53

<211> 81
 <212> PRT
 <213> Homo sapiens

<400> 80
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 20 25 30
 Leu Leu His Pro Thr Val Ala Ser Val Val Trp Thr Trp Trp Leu Leu
 35 40 45
 His Pro Thr Gln Gly Asn Ser Val Leu Leu His Pro Thr Asp Cys Trp
 50 55 60
 Glu Arg Ala Ser Gly Thr Phe Leu Trp Gly Ile Ile Leu Phe Cys Leu
 65 70 75 80
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<210> 81
 <211> 3465
 <212> DNA
 <213> Homo sapiens

<400> 81
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<210> 82

<211> 51

<212> PRT

<213> Homo sapiens

<400> 82

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Met Met Ile Arg Ala Ala His Leu His Gly Leu Val Ser Leu Leu Leu
  1                      5                      10                      15

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Met Trp Ile Tyr Ala Thr Asp Leu His Phe Gly His His Lys Lys Tyr
      20                      25                      30

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Cys Cys Ala Ser Pro Thr Pro Thr Pro Thr Pro Leu Val Tyr Ser Leu
      35                      40                      45

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Lys Trp Tyr
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<210> 83

<211> 808

<212> DNA

<213> Homo sapiens

<400> 83

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55

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<210> 84
 <211> 45
 <212> PRT
 <213> Homo sapiens

<400> 84
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 Val Ile Lys Phe Val Leu Asn Lys Cys Glu Gly His Gln Leu Lys Gly
 20 25 30
 Thr Ala Asn Ser Leu Arg Pro Leu Val Leu Ala Val Pro
 35 40 45

<210> 85
 <211> 1024
 <212> DNA
 <213> Homo sapiens

<400> 85
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 catgccataa acatccttga acccatgacg gaaagcccat cccatattct gaaaaaatgc 180
 caaattaggt ttttctttct ttttggaaat cagtcattac agtaaccgaa accattgggt 240
 tcagcgaaaa tggaaagatt tagctgaatg tagtcagtcc aattaagttg gatgcaactg 300
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 aaaa 1024

<210> 86
 <211> 64
 <212> PRT
 <213> Homo sapiens

<400> 86
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 His His Met Cys Thr Val Leu Phe Ala Val Val Leu Ile Ile His Pro
 20 25 30
 Ser Leu Cys His Pro Gln Ala Ser Leu Gly Val Lys Arg Lys Leu Ser
 35 40 45

Thr Asp Thr Ala Met Arg Ser His Val Leu Met Pro Ser Gly Ala Gln
 50 55 60

<210> 87
 <211> 867
 <212> DNA
 <213> Homo sapiens

<400> 87
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<210> 88
 <211> 51
 <212> PRT
 <213> Homo sapiens

<400> 88
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Phe Leu Ile Cys Ser Lys Glu Asn Ala Ala Ile Leu His Ser Leu Trp
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Lys Glu Thr Lys Gln Asn Lys Thr His Ser Lys Pro Ala Val Leu Leu
 35 40 45

Ser Asp Lys
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<210> 89
 <211> 1797
 <212> DNA
 <213> Homo sapiens

<400> 89
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<210> 90

<211> 245

<212> PRT

<213> Homo sapiens

<400> 90

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Met Ala Ser Pro Ser Arg Arg Leu Gln Thr Lys Pro Val Ile Thr Cys
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  20              25              30

Val Ile Leu Leu Ala Val Gly Ile Trp Gly Lys Val Ser Leu Glu Asn
  35              40              45

Tyr Phe Ser Leu Leu Asn Glu Lys Ala Thr Asn Val Pro Phe Val Leu
  50              55              60

Ile Ala Thr Gly Thr Val Ile Ile Leu Leu Gly Thr Phe Gly Cys Phe
  65              70              75              80

Ala Thr Cys Arg Ala Ser Ala Trp Met Leu Lys Leu Tyr Ala Met Phe
  85              90              95

Leu Thr Leu Val Phe Leu Val Glu Leu Val Ala Ala Ile Val Gly Phe
 100              105              110

Val Phe Arg His Glu Ile Lys Asn Ser Phe Lys Asn Asn Tyr Glu Lys
 115              120              125

Ala Leu Lys Gln Tyr Asn Ser Thr Gly Asp Tyr Arg Ser His Ala Val
 130              135              140

Asp Lys Ile Gln Asn Thr Leu His Cys Cys Gly Val Thr Asp Tyr Arg
 145              150              155              160

Asp Trp Thr Asp Thr Asn Tyr Tyr Ser Glu Lys Gly Phe Pro Lys Ser
 165              170              175

Cys Cys Lys Leu Glu Asp Cys Thr Pro Gln Arg Asp Ala Asp Lys Val
 180              185              190

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Asn Asn Glu Gly Cys Phe Ile Lys Val Met Thr Ile Ile Glu Ser Glu
 195 200 205

Met Gly Val Val Ala Gly Ile Ser Phe Gly Val Ala Cys Phe Gln Leu
 210 215 220

Ile Gly Ile Phe Leu Ala Tyr Cys Leu Ser Arg Ala Ile Thr Asn Asn
 225 230 235 240

Gln Tyr Glu Ile Val
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<210> 91
 <211> 1992
 <212> DNA
 <213> Homo sapiens

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 cacttatctt taaataaaat gagtttttcc tttaaaaaaa aaaaaaaaaa aaaaaaaaaa 1980
 aaaaaaaaaa aa 1992

<210> 92
 <211> 556
 <212> PRT
 <213> Homo sapiens

<400> 92
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Trp Glu Pro Gly Lys Arg Arg Cys Ala Lys Cys Gly Arg Leu Asp Phe
 20 25 30

Ile Leu Met Lys Lys Met Gly Ile Lys Ser Gly Phe Thr Phe Trp Asn
 35 40 45

Leu Val Phe Leu Leu Thr Val Ser Cys Val Lys Gly Phe Ile Tyr Thr
 50 55 60

Cys Gly Gly Thr Leu Lys Gly Leu Asn Gly Thr Ile Glu Ser Pro Gly
 65 70 75 80

Phe Pro Tyr Gly Tyr Pro Asn Gly Ala Asn Cys Thr Trp Val Ile Ile
 85 90 95

Ala Glu Glu Arg Asn Arg Ile Gln Ile Val Phe Gln Ser Phe Ala Leu
 100 105 110

Glu Glu Glu Tyr Asp Tyr Leu Ser Leu Tyr Asp Gly His Pro His Pro
 115 120 125

Thr Asn Phe Arg Thr Arg Leu Thr Gly Phe His Leu Pro Pro Pro Val
 130 135 140

Thr Ser Thr Lys Ser Val Phe Ser Leu Arg Leu Thr Ser Asp Phe Ala
 145 150 155 160

Val Ser Ala His Gly Phe Lys Val Tyr Tyr Glu Glu Leu Gln Ser Ser
 165 170 175

Ser Cys Gly Asn Pro Gly Val Pro Pro Lys Gly Val Leu Tyr Gly Thr
 180 185 190

Arg Phe Asp Val Gly Asp Lys Ile Arg Tyr Ser Cys Val Thr Gly Tyr
 195 200 205

Ile Leu Asp Gly His Pro Gln Leu Thr Cys Ile Ala Asn Ser Val Asn
 210 215 220

Thr Ala Ser Trp Asp Phe Pro Val Pro Ile Cys Arg Ala Glu Asp Ala
 225 230 235 240

Cys Gly Gly Thr Met Arg Gly Ser Ser Gly Ile Ile Ser Ser Pro Ser
 245 250 255

Phe Pro Asn Glu Tyr His Asn Asn Ala Asp Cys Thr Trp Thr Ile Val
 260 265 270

Ala Glu Pro Gly Asp Thr Ile Ser Leu Ile Phe Thr Asp Phe Gln Met
 275 280 285

Glu Glu Lys Tyr Asp Tyr Leu Glu Ile Glu Gly Ser Glu Pro Pro Thr
 290 295 300

Ile Trp Leu Ser Gly Met Asn Ile Pro Pro Pro Ile Ile Ser Asn Lys
 305 310 315 320

Asn Trp Leu Arg Leu His Phe Val Thr Asp Ser Asn His Arg Tyr Arg
 325 330 335

Gly Phe Ser Ala Pro Tyr Gln Val Lys Lys Ala Ile Asp Phe Lys Ser
 340 345 350
 Arg Gly Phe Lys Leu Phe Pro Gly Lys Asp Asn Ser Asn Lys Phe Ser
 355 360 365
 Ile Leu Asn Glu Gly Gly Ile Lys Thr Ala Ser Asn Leu Cys Pro Asp
 370 375 380
 Pro Gly Glu Pro Glu Asn Gly Lys Arg Ile Gly Ser Asp Phe Ser Leu
 385 390 395 400
 Gly Ser Thr Val Gln Phe Ser Cys Asp Glu Asp Tyr Val Leu Gln Gly
 405 410 415
 Ala Lys Ser Ile Thr Cys Gln Arg Ile Ala Glu Val Phe Ala Ala Trp
 420 425 430
 Ser Asp His Arg Pro Val Cys Lys Val Lys Thr Cys Gly Ser Asn Leu
 435 440 445
 Gln Gly Pro Ser Gly Thr Phe Thr Ser Pro Asn Phe Pro Phe Gln Tyr
 450 455 460
 Asp Ser Asn Ala Gln Cys Val Trp Val Ile Thr Ala Val Asn Thr Asn
 465 470 475 480
 Lys Val Ile Gln Ile Asn Phe Glu Glu Phe Asp Leu Glu Ile Gly Tyr
 485 490 495
 Asp Thr Leu Thr Ile Gly Asp Gly Gly Glu Val Gly Asp Pro Arg Thr
 500 505 510
 Val Leu Gln Val Leu Thr Gly Ser Phe Val Pro Asp Leu Ile Val Ser
 515 520 525
 Met Ser Ser Gln Met Trp Leu His Leu Gln Thr Asp Glu Ser Val Gly
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 545 550 555

<210> 93

<211> 2085

<212> DNA

<213> Homo sapiens

<400> 93

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<210> 94

<211> 399

<212> PRT

<213> Homo sapiens

<400> 94

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      20              25              30

```

```

Val Arg Pro Ser Pro Ala Lys Arg Arg Leu Ser Thr Leu Ile Leu His
      35              40              45

```

```

Gly Gly Gly Thr Val Cys Arg Val Gln Glu Pro Gly Ala Val Leu Leu
      50              55              60

```

```

Ala Gln Pro Gly Glu Ala Leu Ala Glu Ala Ser Gly Asp Phe Ile Ser
      65              70              75              80

```

```

Thr Gln Tyr Ile Leu Asp Cys Val Glu Arg Asn Glu Arg Leu Glu Leu
      85              90              95

```

```

Glu Ala Tyr Arg Leu Gly Pro Ala Ser Ala Ala Asp Thr Gly Ser Glu
      100              105              110

```

```

Ala Lys Pro Gly Ala Leu Ala Glu Gly Ala Ala Glu Pro Glu Pro Gln
      115              120              125

```

```

Arg His Ala Gly Arg Ile Ala Phe Thr Asp Ala Asp Asp Val Ala Ile
      130              135              140

```

```

Leu Thr Tyr Val Lys Glu Asn Ala Arg Ser Pro Ser Ser Val Thr Gly
      145              150              155              160

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```

Asn Ala Leu Trp Lys Ala Met Glu Lys Ser Ser Leu Thr Gln His Ser
      165              170              175

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Trp Gln Ser Leu Lys Asp Arg Tyr Leu Lys His Leu Arg Gly Gln Glu
 180 185 190
 His Lys Tyr Leu Leu Gly Asp Ala Pro Val Ser Pro Ser Ser Gln Lys
 195 200 205
 Leu Lys Arg Lys Ala Glu Glu Asp Pro Glu Ala Ala Asp Ser Gly Glu
 210 215 220
 Pro Gln Asn Lys Arg Thr Pro Asp Leu Pro Glu Glu Glu Tyr Val Lys
 225 230 235 240
 Glu Glu Ile Gln Glu Asn Glu Glu Ala Val Lys Lys Met Leu Val Glu
 245 250 255
 Ala Thr Arg Glu Phe Glu Glu Val Val Val Asp Glu Ser Pro Pro Asp
 260 265 270
 Phe Glu Ile His Ile Thr Met Cys Asp Asp Asp Pro Pro Thr Pro Glu
 275 280 285
 Glu Asp Ser Glu Thr Gln Pro Asp Glu Glu Glu Glu Glu Glu Glu
 290 295 300
 Lys Val Ser Gln Pro Glu Val Gly Ala Ala Ile Lys Ile Ile Arg Gln
 305 310 315 320
 Leu Met Glu Lys Phe Asn Leu Asp Leu Ser Thr Val Thr Gln Ala Phe
 325 330 335
 Leu Lys Asn Ser Gly Glu Leu Glu Ala Thr Ser Ala Phe Leu Ala Ser
 340 345 350
 Gly Gln Arg Ala Asp Gly Tyr Pro Ile Trp Ser Arg Gln Asp Asp Ile
 355 360 365
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 385 390 395

<210> 95

<211> 1427

<212> DNA

<213> Homo sapiens

<400> 95

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 ctatactgcc agttcacgct tttcctccag accattgtag ctgatacctc atggagtcac 240
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 cctacgaaat ctatctccct acgtcacttc cacacctcct gttcttggac ccctcactat 720

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 <212> PRT
 <213> *Homo sapiens*

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<220>
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 35 40 45
 Phe Phe His Pro Asp Glu Val Leu Phe Phe Tyr Thr Tyr Ser Leu Ser
 50 55 60
 Tyr Ser Arg Ser Pro Ala Thr Leu Tyr Pro Ser Leu Ile Ile Ser Arg
 65 70 75 80
 Ile Pro Ser Thr Ser Pro Thr Pro Ser Ser Pro Ser Pro Ile Leu Pro
 85 90 95
 Met His Phe Pro Leu Phe Leu Xaa Leu Tyr Arg Cys Pro Cys Pro Ala
 100 105 110
 Ser Pro Xaa Gly Asn Phe Pro His Leu Pro Ile Pro Pro Asn Leu Phe
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 Gln

<210> 97
 <211> 2482
 <212> DNA
 <213> *Homo sapiens*

<220>
 <221> unsure

<222> (1663)

<400> 97

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<211> 413

<212> PRT

<213> Homo sapiens

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                20                      25                      30
Lys Val Pro Arg Ile Val Ser Glu Arg Thr Phe His Leu Thr Ser Pro
  35                      40                      45

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65

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 65 70 75 80
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 85 90 95
 Arg Val Lys Val Gln Asp Leu Val Leu Glu Pro Thr Gln Asn Ile Thr
 100 105 110
 Thr Lys Gly Val Ser Val Arg Arg Lys Arg Gln Val Tyr Gly Thr Asp
 115 120 125
 Ser Arg Phe Ser Ile Leu Asp Lys Arg Phe Leu Thr Asn Phe Pro Phe
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 Ser Thr Ala Val Lys Leu Ser Thr Gly Cys Ser Gly Ile Leu Ile Ser
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 Pro Gln His Val Leu Thr Ala Ala His Cys Val His Asp Gly Lys Asp
 165 170 175
 Tyr Val Lys Gly Ser Lys Lys Leu Arg Val Gly Leu Leu Lys Met Arg
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 Asn Lys Ser Gly Gly Lys Lys Arg Arg Gly Ser Lys Arg Ser Arg Arg
 195 200 205
 Glu Ala Ser Gly Gly Asp Gln Arg Glu Gly Thr Arg Glu His Leu Gln
 210 215 220
 Glu Arg Ala Lys Gly Gly Arg Arg Arg Lys Lys Ser Gly Arg Gly Gln
 225 230 235 240
 Lys Ile Ala Glu Gly Arg Pro Ser Phe Gln Trp Thr Arg Val Lys Asn
 245 250 255
 Thr His Ile Pro Lys Gly Trp Ala Arg Gly Gly Met Gly Asp Ala Thr
 260 265 270
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 275 280 285
 Lys Tyr Met Glu Leu Gly Ile Ser Pro Thr Ile Lys Lys Met Pro Gly
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 Gly Met Ile His Phe Ser Gly Phe Asp Asn Asp Arg Ala Asp Gln Leu
 305 310 315 320
 Val Tyr Arg Phe Cys Ser Val Ser Asp Glu Ser Asn Asp Leu Leu Tyr
 325 330 335
 Gln Tyr Cys Asp Ala Glu Ser Gly Ser Thr Gly Ser Gly Val Tyr Leu
 340 345 350
 Arg Leu Lys Asp Pro Asp Lys Lys Asn Trp Lys Arg Lys Ile Ile Ala
 355 360 365
 Val Tyr Ser Gly His Gln Trp Val Asp Val His Gly Val Gln Lys Asp
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Tyr Asn Val Ala Val Arg Ile Thr Pro Leu Lys Tyr Ala Gln Ile Cys
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 <212> DNA
 <213> Homo sapiens

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 20           25           30

Thr Met Leu Asn Gly Leu Leu Ile Lys Asp Ser Ser Pro Pro Met Leu
 35           40           45

Leu Xaa Gln Val Xaa Lys Thr Ala Xaa Xaa Asp Xaa Phe Xaa Tyr Gln
 50           55           60

Xaa Cys Phe Met Xaa Ser Val Phe Asp His Phe Pro Glu Ile Leu Phe
 65           70           75           80

Ile His Xaa Thr Tyr Asn Pro Arg Gly Lys Val Leu Tyr Xaa Phe Leu
 85           90           95

Val Asp Gly Pro Xaa Val Gln Leu Glu Gly Xaa Leu Ala Arg Ala Val
 100          105          110

Tyr Phe Ala Ile Pro Ala Lys Glu Asp Thr Glu Gly Leu Ala Gln Met
 115          120          125

Phe Gln Val Phe Lys Lys Phe Asn Pro Ala Trp Glu Arg Val Cys Thr
 130          135          140

Ile Leu Val Asp Pro His Phe Leu Pro Leu Pro Ile Leu Ala Met Glu
 145          150          155          160

Phe Pro Thr Ala Glu Val Leu Leu Ser Ala Phe His Ile Cys Lys Phe
 165          170          175

Leu Gln Ala Lys Phe Tyr Gln Leu Ser Leu Glu Arg Pro Val Glu Arg
 180          185          190

Xaa Leu Leu Thr Ser Leu Gln Ser Thr Met Cys Ser Ala Thr Ala Gly
 195          200          205

Asn Leu Arg Lys Leu Tyr Thr Leu Leu Ser Asn Cys Ile Pro Pro Ala
 210          215          220

Lys Leu Pro Glu Leu His Ser His Trp Leu Leu Asn Asp Arg Ile Trp
 225          230          235          240

Leu Ala His Arg Trp Arg Ser Arg Ala Glu Ser Ser His Tyr Phe Gln
 245          250          255

Ser Leu Glu Val Thr Thr His Ile Leu Ser Gln Phe Phe Gly Thr Thr
 260          265          270

Pro Ser Glu Lys Gln Gly Met Ala Ser Leu Phe Arg Tyr Met Gln Gln
 275          280          285

Asn Ser Ala Asp Lys Ala Asn Phe Asn Gln Gly Leu Cys Ala Gln Asn
 290          295          300

Asn His Ala Pro Pro Asp Ile Ile Pro Glu Ser Pro Lys Leu Glu Gln
 305          310          315          320

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69,

Leu Val Glu Ser His Ile Gln His Ser Leu Asn Ala Ile Cys Thr Gly
 325 330 335
 Pro Ala Ala Gln Leu Cys Leu Gly Glu Leu Ala Val Val Gln Lys Ser
 340 345 350
 Thr His Leu Ile Gly Ser Gly Ser Glu Lys Met Asn Ile Gln Ile Leu
 355 360 365
 Glu Asp Thr His Lys Val Gln Pro Xaa Pro Pro Ala Ser Cys Xaa Cys
 370 375 380
 Tyr Phe Asn Gln Ala Phe His Leu Pro Cys Arg His Ile Leu Ala Met
 385 390 395 400
 Leu Ser Ala Arg Arg Gln Val Leu Gln Pro Asp Met Leu Pro Ala Gln
 405 410 415
 Trp Thr Ala Gly Cys Ala Thr Ser Leu Asp Ser Ile Leu Gly Ser Lys
 420 425 430
 Trp Ser Glu Thr Leu Asp Lys His Leu Ala Val Thr His Leu Thr Glu
 435 440 445
 Glu Val Gly Gln Leu Leu Gln His Cys Thr Lys Glu Glu Phe Glu Arg
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 <211> 700
 <212> DNA
 <213> Homo sapiens

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 <213> Homo sapiens

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 35 40 45
 Glu Ala Tyr Leu Glu Lys Cys Gly Ser Val Arg Arg His Thr Val Ala
 50 55 60
 Asn Ala His Ser Asp Ile Gln Leu Leu Ala Met Ala Thr Met Met His
 65 70 75 80
 Ser Gly Leu Gly Glu Glu Ala Xaa Ser Glu Asn Lys Xaa Leu Leu Leu
 85 90 95
 Pro Pro Xaa Phe Pro Pro Pro His Xaa Gln Cys Ser Ser Xaa Pro Asn
 100 105 110
 Ile Thr Asp Asn Pro Asp Gly Leu Glu Glu Gly Ala Arg Gly Ser Gln
 115 120 125
 Glu Gly Ser Glu Leu Asn Cys Ala Ser Leu Ser
 130 135

<210> 103
 <211> 658
 <212> DNA
 <213> Homo sapiens

<400> 103
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 gcagtggccc atcagggtgg tgtctacaag ggaactttgg tccatctctc ttcagtgact 180
 ggaggagccc ctggccagca tccttcaca castgctgct tgcaggcaca ggactggccc 240
 ccaccttccc ggcctccagc gtggtggcaa gcctgcctga acctgggagt tcctcagggc 300
 ccacttccaa atgccactga gccacagcag ggaacaagaa tcaaagagca cccaccgcg 360
 caccatgcc tatggcccc tccaagggtg tcagtggggg tcaagtgggc ctacaggccc 420
 tcctcgaatc cagccccatc tgcaagtccc aaagaaactt ttctaaagt tctggaatgc 480
 ggggtgcaacc ctcactgggt tttgccccat ttttatgttc cattcatttc actgggattc 540
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71,

<210> 104
 <211> 155
 <212> PRT
 <213> Homo sapiens

<220>
 <221> UNSURE
 <222> (46)

<400> 104
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 Val Ala His Gln Gly Gly Val Tyr Lys Gly Thr Leu Val His Leu Ser
 20 25 30
 Ser Val Thr Gly Gly Ala Pro Gly Gln His Pro Ser Thr Xaa Cys Cys
 35 40 45
 Leu Gln Ala Gln Asp Trp Pro Pro Pro Ser Arg Pro Pro Ala Trp Trp
 50 55 60
 Gln Ala Cys Leu Asn Leu Gly Val Pro Gln Gly Pro Leu Pro Asn Ala
 65 70 75 80
 Thr Glu Pro Gln Gln Gly Thr Arg Ile Lys Glu His Pro Thr Arg His
 85 90 95
 Pro Cys Leu Trp Pro Pro Pro Arg Val Ser Val Gly Phe Ser Gly Pro
 100 105 110
 Tyr Arg Pro Ser Ser Asn Pro Ala Pro Ser Ala Ser Pro Lys Glu Thr
 115 120 125
 Phe Leu Lys Phe Leu Glu Cys Gly Cys Asn Pro His Trp Phe Leu Pro
 130 135 140
 His Phe Tyr Val Pro Phe Ile Ser Leu Gly Phe
 145 150 155

<210> 105
 <211> 836
 <212> DNA
 <213> Homo sapiens

<400> 105
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 gtatcataga ataattcatc tcttgtcata tactttctcc cagttttgac ccagcaaaac 180
 aaagagaagc ctactagac aaaatgcacc ttattcttac aagggtggaa acaatacatt 240
 gaaatagcca ggtacttgaa atgggagaag gataatgaac agcgaggaca agacagttgg 300
 ccatTTTTcc gcgtctattg ctctctttct tatttctgca cttttattgc ttctaattggg 360
 ttcaactatg tgtgtttata tttttaggaa tggaggaaat accttaggaa gcagatgaat 420
 tattgatcat atacagaaat gatagagaca gtaggaaata tgtttgatgg aagccctgtg 480
 tatataattt tggggggagg ggcttgaagt cacttggtac acagggtttt gggtaaggat 540
 tggagaaaat ggggaataaat ttttctagaa gcagaactat gttctgaatt ggcatctttg 600
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 cagccctagt gaaacttcca agctctttga gagttgactt tttggtttgg atagaaaatg 780
 gaagtaagga taatagattt gactgtgtgc catggtagtg gaaaaaaaaa aaaaaa 836

72.

<210> 106

<211> 47

<212> PRT

<213> Homo sapiens

<400> 106

Met Asn Ser Glu Asp Lys Thr Val Gly His Phe Ser Ala Ser Ile Ala
 1 5 10 15

Leu Phe Leu Ile Ser Ala Pro Leu Leu Leu Leu Met Gly Ser Thr Met
 20 25 30

Cys Val Tyr Ile Phe Arg Asn Gly Gly Asn Thr Leu Gly Ser Arg
 35 40 45

<210> 107

<211> 1581

<212> DNA

<213> Homo sapiens

<400> 107

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 tagcccagca cagagccacc ggaacatcaa gatcctagag gacgaacccc acagtaagga 180
 tgagacccca ctgtgtaccc ttctggactg gcaggattct cttgccaaagc gctgcgtctg 240
 tgtgtccaat accattcgaa gcctgtcatt tgtgccaggc aatgactttg agatgtccaa 300
 acacccaggg ctgctgctca tctggggcaa gctgatcctg ctgcaccaca agcaccacaga 360
 acggaagcag gcaccactaa cttatgaaaa ggaggaggaa caggaccaag ggtgagctgc 420
 aacaaaatgg agtgggtggg ggactgcttg gagatgctcc gggaaaacac cttgggttaca 480
 ctgcgcaaca tctcggggca gttggacctt tctccatacc ccgagagcat ttgcctgcct 540
 gtcctggacg gactcctaca ctgggagatt tgcccttcag ctgaagccca ggaccccttt 600
 tccacctggg gcccgaatgc cgtccctttcc ccgagagac tggctcttga aaccctcagc 660
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 ctggagaagt tgtatagcac tatggtgcgc ttcctcagtg accgaaagaa cccggtgtgc 780
 cgggagatgg ctgtggtact gctggccaac ctgggtcagg gggacagcct ggcagctcgt 840
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 aaaaaaaaaa aaaaaaaaaa a 1581

<210> 108

<211> 240

<212> PRT

<213> Homo sapiens

<400> 108

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 20 25 30

Glu Ser Ile Cys Leu Pro Val Leu Asp Gly Leu Leu His Trp Ala Val
 35 40 45
 Cys Pro Ser Ala Glu Ala Gln Asp Pro Phe Ser Thr Leu Gly Pro Asn
 50 55 60
 Ala Val Leu Ser Pro Gln Arg Leu Val Leu Glu Thr Leu Ser Lys Leu
 65 70 75 80
 Ser Ile Gln Asp Asn Asn Val Asp Leu Ile Leu Ala Thr Pro Pro Phe
 85 90 95
 Ser Arg Leu Glu Lys Leu Tyr Ser Thr Met Val Arg Phe Leu Ser Asp
 100 105 110
 Arg Lys Asn Pro Val Cys Arg Glu Met Ala Val Val Leu Leu Ala Asn
 115 120 125
 Leu Ala Gln Gly Asp Ser Leu Ala Ala Arg Ala Ile Ala Val Gln Lys
 130 135 140
 Gly Ser Ile Gly Asn Leu Leu Gly Phe Leu Glu Asp Ser Leu Ala Ala
 145 150 155 160
 Thr Gln Phe Gln Gln Ser Gln Ala Ser Leu Leu His Met Gln Asn Pro
 165 170 175
 Pro Phe Glu Pro Thr Ser Val Asp Met Met Arg Arg Ala Ala Arg Ala
 180 185 190
 Leu Leu Ala Leu Ala Lys Val Asp Glu Asn His Ser Glu Phe Thr Leu
 195 200 205
 Tyr Glu Ser Arg Leu Leu Asp Ile Ser Val Ser Pro Leu Met Asn Ser
 210 215 220
 Leu Val Ser Gln Val Ile Cys Asp Val Leu Phe Leu Ile Gly Gln Ser
 225 230 235 240

<210> 109

<211> 1684

<212> DNA

<213> Homo sapiens

<400> 109

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 aagtgtttcc atgccaccta agggagactc aggacagcca ttatttctca ccccttacat 240
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 gaacatgaag agttatgccg gcttcctcac cgtgaataag acttacaaca gcaacctctt 360
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 agtcaatgag gacgatgtag cacgggattt atacagtgc ctaattcagt tttccagat 660
 atttcctgaa tataaaaata atgactttta tgtcactggg gagtcttatg cagggaaata 720
 tgtgccagcc attgcacacc tcatccattc cctcaaccct gtgagagagg tgaagatcaa 780
 cctgaacgga attgctattg gagatggata ttctgatccc gaatcaatta tagggggcta 840
 tgcagaattc ctgtacctaa ttggcttggt ggatgagaag caaaaaaagt acttccagaa 900

74,

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aggatgtagt aattactata actttttgcg gtgcacggaa cctgaggatc agctttacta 1080
tgtgaaattt ttgtcactcc cagaggtgag acaagccatc cacgtgggga atcagacttt 1140
taatgatgga actatagttg aaaagtactt gcgagaagat acagtacagt cagttaagcc 1200
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aaaa                                             1684

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<210> 110

<211> 476

<212> PRT

<213> Homo sapiens

<400> 110

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Met Val Gly Ala Met Trp Lys Val Ile Val Ser Leu Val Leu Leu Met
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Pro Gly Pro Cys Asp Gly Leu Phe His Ser Leu Tyr Arg Ser Val Ser
      20             25             30

Met Pro Pro Lys Gly Asp Ser Gly Gln Pro Leu Phe Leu Thr Pro Tyr
  35             40             45

Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu Val Gly
  50             55             60

Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu Thr Val
  65             70             75             80

Asn Lys Thr Tyr Asn Ser Asn Leu Phe Phe Trp Phe Phe Pro Ala Gln
      85             90             95

Ile Gln Pro Glu Asp Ala Pro Val Val Leu Trp Leu Gln Gly Gly Pro
  100            105            110

Gly Gly Ser Ser Met Phe Gly Leu Phe Val Glu His Gly Pro Tyr Val
  115            120            125

Val Thr Ser Asn Met Thr Leu Arg Asp Arg Asp Phe Pro Trp Thr Thr
  130            135            140

Thr Leu Ser Met Leu Tyr Ile Asp Asn Pro Val Gly Thr Gly Phe Ser
  145            150            155            160

Phe Thr Asp Asp Thr His Gly Tyr Ala Val Asn Glu Asp Asp Val Ala
      165            170            175

Arg Asp Leu Tyr Ser Ala Leu Ile Gln Phe Phe Gln Ile Phe Pro Glu
      180            185            190

Tyr Lys Asn Asn Asp Phe Tyr Val Thr Gly Glu Ser Tyr Ala Gly Lys
      195            200            205

Tyr Val Pro Ala Ile Ala His Leu Ile His Ser Leu Asn Pro Val Arg
      210            215            220

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75.

Glu Val Lys Ile Asn Leu Asn Gly Ile Ala Ile Gly Asp Gly Tyr Ser
 225 230 235 240
 Asp Pro Glu Ser Ile Ile Gly Gly Tyr Ala Glu Phe Leu Tyr Leu Ile
 245 250 255
 Gly Leu Leu Asp Glu Lys Gln Lys Lys Tyr Phe Gln Lys Gln Cys His
 260 265 270
 Glu Cys Ile Glu His Ile Arg Lys Gln Asn Trp Phe Glu Ala Phe Glu
 275 280 285
 Ile Leu Asp Lys Leu Leu Asp Gly Asp Leu Thr Ser Asp Pro Ser Tyr
 290 295 300
 Phe Gln Asn Val Thr Gly Cys Ser Asn Tyr Tyr Asn Phe Leu Arg Cys
 305 310 315 320
 Thr Glu Pro Glu Asp Gln Leu Tyr Tyr Val Lys Phe Leu Ser Leu Pro
 325 330 335
 Glu Val Arg Gln Ala Ile His Val Gly Asn Gln Thr Phe Asn Asp Gly
 340 345 350
 Thr Ile Val Glu Lys Tyr Leu Arg Glu Asp Thr Val Gln Ser Val Lys
 355 360 365
 Pro Trp Leu Thr Glu Ile Met Asn Asn Tyr Lys Val Leu Ile Tyr Asn
 370 375 380
 Gly Gln Leu Asp Ile Ile Val Ala Ala Ala Leu Thr Glu Arg Ser Leu
 385 390 395 400
 Met Gly Met Asp Trp Lys Gly Ser Gln Glu Tyr Lys Lys Ala Glu Lys
 405 410 415
 Lys Val Trp Lys Ile Phe Lys Ser Asp Ser Glu Val Ala Gly Tyr Ile
 420 425 430
 Arg Gln Ala Gly Asp Phe His Gln Val Ile Ile Arg Gly Gly Gly His
 435 440 445
 Ile Leu Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile Asn Arg
 450 455 460
 Phe Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly
 465 470 475

<210> 111

<211> 750

<212> DNA

<213> Homo sapiens

<400> 111

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 cctggcgctg tgctagcttt cctttacagc tgtttacaga caaggcaggc ctgaggcaga 180
 tggccactgc tcttgatgat tttgctcaga ggaatatgaa cattttattt ttgaaaagg 240
 atgatgtggt ttttgccagg tgtttataat taatccttta atattatggt tattaacctc 300
 ttaaaccatga atgaattcct gattgtttta acacagtacc taagactaat gctttctgtg 360

76

gacaccactg agctctgcct caactccacc ctctgcgacc ggaggactat gcccctagta 420
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 tctgagacag gatcgttgct cctacaggag gaacagtggc cttgcttctt agacgggtctt 540
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 acttaaagat cataaacttc aggcaataat attttctgtg taagctttta aaattatttt 660
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 tcttagaata aaaaaaaaaa aaaaaaaaaa 750

<210> 112

<211> 89

<212> PRT

<213> Homo sapiens

<400> 112

Met Val Ile Asn Leu Leu Asn Met Asn Glu Phe Leu Ile Val Leu Thr
 1 5 10 15

Gln Tyr Leu Arg Leu Met Leu Ser Val Asp Thr Thr Glu Leu Cys Leu
 20 25 30

Asn Ser Thr Leu Cys Asp Arg Arg Thr Met Pro Leu Val Thr Ala Val
 35 40 45

Gly Val Asp Ala Val Leu Val Leu Phe Ser Lys Gly Ala Glu Gly Gln
 50 55 60

Val Ser Glu Thr Gly Ser Leu Ser Leu Gln Glu Glu Gln Trp Pro Cys
 65 70 75 80

Phe Leu Asp Gly Leu His Cys Val Phe
 85

<210> 113

<211> 2156

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (1353)

<400> 113

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 gtgggttttga tttgcatgtc cctgataaat aatgatgttg accatctact catgtgcttg 180
 ttggctattt gcatggcgtg tttggagaaa cgtctgttca agggctttgc cttttttttt 240
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gactcatttt agatgtgtgt gtgtgtgtat atatatgtgt gtgtgtgtga aaaacattga 2100
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<210> 114

<211> 94

<212> PRT

<213> Homo sapiens

<400> 114

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Met Val Met Cys Leu Lys Ser Ser Leu Ser Leu Phe Phe Pro Asn Gln
  1             5             10             15

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Ser Val Lys Phe Gln Arg Thr Met Leu Lys Ser Pro Ile Ile Val Val
      20             25             30

```

```

Leu Lys Val Val Ser Ser Val Phe Pro Ser Phe Asn Ser Ser Ser Val
  35             40             45

```

```

Ala Val Arg Leu Gln Ile Pro Gly Cys Leu Thr Trp Val Pro Phe His
  50             55             60

```

```

Met Gly Val Ser Gln Gln Thr Ala Leu Gln Ile Val His Thr Phe Ser
  65             70             75             80

```

```

Lys Thr Asn Asn Gly Thr Gly Gly Lys Pro Met Pro Ile Tyr
      85             90

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<210> 115

<211> 3941

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (2895)

<400> 115

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ataatgacat attatgactg taagtgcagt cagcccatc tggggctgag gcgggggcc 180
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gcagaggccg gtgacctggc gaggacttgc ccaggagatt ggagctcctt gcttctgcgc 360
cacgcggatg cccacgctg gtctcagctg ggttggtggc tctgagtggg catctcgttg 420
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| | | | | | | |
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| ctgccatgtc | ctgctatgaa | tacagctttg | tatttctctc | tctagttttg | tcagttttgg | 600 |
| cttttcagat | tttgaagcgt | gtttgtgggc | tgaatcttgc | ccttatcacc | catttctagg | 660 |
| atgctttttg | ctccactcat | tctttgtctt | gcttcacttg | actttgaact | gtatactttt | 720 |
| ttccatcggt | ttactttcag | tatcttcata | catgtatggt | tttgtaagcc | tctcttagaa | 780 |
| cagtgtatgg | ttttgtaaaa | attcagcctg | tagcttttac | ctgcctcctt | catgaccttt | 840 |
| ataatcccc | tggttctcag | cctgccactc | acaggacttt | tccctgtgct | gcgttccmag | 900 |
| tgccccctcc | ccgccccac | ctgtgctttt | tgttggttta | gtagaattgc | ttttgtcatt | 960 |
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| aaattagaaa | tgacaccacg | tattcttagc | gaagtccagt | tttcagcatt | ttgtccttat | 1080 |
| tggacaatag | caaggatatt | agaacgtggt | ggttccgcgt | gcttccgtct | tgagttatgt | 1140 |
| gctgctattg | tcggatattt | tgtcttagat | gtacgtactt | tcctgttcat | tgtggtagtg | 1200 |
| gtaatttgcg | ttactttgaa | ttttccacgt | ttttactttc | tttgtctctc | atcacttact | 1260 |
| gcttttggga | cccccccat | cgggggttcc | attccctctc | cctagagcac | actcccttgg | 1320 |
| atttctcga | gtggggtctg | ctgcggtgaa | gctttcccat | tttatgtgca | gattattttc | 1380 |
| agagggtata | tagaattcag | gcagctgttt | cggtgtagca | cattaaaaat | attttcccac | 1440 |
| ttctccttg | cttctgttgt | tgtctttgag | tgttacctct | gagtctgcct | gtgctccctg | 1500 |
| gaaacggccc | gggtttccca | ccccctgcc | aggtttgctc | cttccgtggg | ttttctgtca | 1560 |
| ttatcacgct | cacgtgtttc | cctcggtcac | cccctctgca | attttcacac | gtcttttccc | 1620 |
| tctctctttg | cttcattacc | tttggccgc | ctgccagctg | ctgattctct | ctgaagatgt | 1680 |
| ctctaaatga | cttttaactg | tgatttgtgg | aattcttatt | gtggagtttt | gcgtcttttc | 1740 |
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| ctgtttggct | gggtgtgtct | gagttgcaac | ctgagcgggt | ttctttgtct | tcttacttgt | 1920 |
| ctgggtattg | gttctctcgg | gacgttgctg | ttgaggggtc | gcacctcaga | gcaagccgag | 1980 |
| gtctgggcta | agcctgtgct | ttggcaggca | ggaccttagt | ttgccttttc | tgggcacctg | 2040 |
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| caggtagcct | ctggaggagg | tgggtggagg | gcacgggcat | cctggccgcc | gctgtgttgg | 2400 |
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| cggcctgttg | aggtattggg | atggggacca | gcggaacttg | tggcagaggg | gcctcagggc | 2580 |
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| tatccagaag | ctcctgtcag | gcactgcagt | gtgagtttca | agtgtacttg | gccttagacg | 2820 |
| gaatggcagg | gcgcagcctc | ccttggctga | gggcaggagt | ccacggctcc | aggcgggaga | 2880 |
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| ccggaagacc | acggccagcc | agggtgtacga | gacattgtct | acctacagtg | acktcgtggg | 3540 |
| cgcggatgtg | ctggacgagg | tgggtactgt | gctcagtgac | actgsgtgga | cgcagagctt | 3600 |
| gcagtgggtga | gagagcagcg | caaccgtctg | tgtgaccttc | tgggcgtacc | caggccccag | 3660 |
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| ccagctgttt | aagggtagcg | ctggcccttg | gaggtgtggca | ctagctgaca | gcttttctct | 3840 |
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| tgcttcctat | aaaatcatgt | accaagaaaa | aaaaaaaaaa | a | | 3941 |

<210> 116

<211> 70

<212> PRT

<213> Homo sapiens

<400> 116

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1 5 10 15

Val His Cys Gly Met Cys Asn Leu Arg Tyr Phe Glu Phe Ser Thr Phe
20 25 30

Leu Leu Ser Leu Ser Leu Ile Thr Tyr Cys Phe Trp Asp Pro Pro His
35 40 45

Arg Gly Ser His Ser Leu Ser Leu Glu His Thr Pro Leu Asp Phe Leu
50 55 60

Glu Trp Gly Leu Leu Arg
65 70

<210> 117

<211> 1779

<212> DNA

<213> Homo sapiens

<400> 117

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<210> 118

<211> 109

<212> PRT

<213> Homo sapiens

<400> 118

80

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 20 25 30
 Gly Val Gln Lys Asp Gln Cys Lys Ser Lys Thr Ser Cys Ala Cys Pro
 35 40 45
 Arg Gly Pro Gln Arg Gln Asp Ala Pro Thr Gln Lys Glu Thr Pro Lys
 50 55 60
 Leu Ala Trp Pro Lys Gly Gly Arg Thr Gln Gly Gly Cys Arg Asn Ser
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 Ser Lys Asn Asn Asp Val Ile Arg Gln Met Cys His Cys Ala Gly Ala
 85 90 95
 Gly Trp Val Trp Gln Ala His Leu Gly Tyr Ala Lys Leu
 100 105

<210> 119
 <211> 1170
 <212> DNA
 <213> Homo sapiens

<400> 119
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 cccgcgagcg gccggcaccg acggcagcga ctttcagcac cgggagcgcg tcgccatgca 180
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<210> 120
 <211> 183
 <212> PRT
 <213> Homo sapiens

<400> 120
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 Phe Gln His Arg Glu Arg Val Ala Met His Tyr Gln Met Ser Val Thr
 20 25 30

81.

Leu Lys Tyr Glu Ile Lys Lys Leu Ile Tyr Val His Leu Val Ile Trp
 35 40 45
 Leu Leu Leu Val Ala Lys Met Ser Val Gly His Leu Arg Leu Leu Ser
 50 55 60
 His Asp Gln Val Ala Met Pro Tyr Gln Trp Glu Tyr Pro Tyr Leu Leu
 65 70 75 80
 Ser Ile Leu Pro Ser Leu Leu Gly Leu Leu Ser Phe Pro Arg Asn Asn
 85 90 95
 Ile Ser Tyr Leu Val Leu Ser Met Ile Ser Met Gly Leu Phe Ser Ile
 100 105 110
 Ala Pro Leu Ile Tyr Gly Ser Met Glu Met Phe Pro Ala Ala Gln Gln
 115 120 125
 Leu Tyr Arg His Gly Lys Ala Tyr Arg Phe Leu Phe Gly Phe Ser Ala
 130 135 140
 Val Ser Ile Met Tyr Leu Val Leu Val Leu Ala Val Gln Val His Ala
 145 150 155 160
 Trp Gln Leu Tyr Tyr Ser Lys Lys Leu Leu Asp Ser Trp Phe Thr Ser
 165 170 175
 Thr Gln Glu Lys Lys His Lys
 180

<210> 121

<211> 1127

<212> DNA

<213> Homo sapiens

<400> 121

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<210> 122

<211> 140

<212> PRT

<213> Homo sapiens

82

<400> 122

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Gln Ile Leu Tyr Asn Ile Lys Gln Glu Tyr Lys Arg Met Gln Lys Arg
 20 25 30

Arg His Leu Glu Thr Ser Phe Gln Gln Thr Asp Pro Cys Cys Thr Ser
 35 40 45

Asp Ala Gln Pro His Ala Phe Leu Leu Ser Gly Pro Ala Ser Pro Gly
 50 55 60

Thr Ser Ser Ala Ala Ser Ser Pro Leu Lys Lys Glu Gln Pro Leu Phe
 65 70 75 80

Thr Leu Arg Gln Val Gly Met Ile Cys Glu Arg Leu Leu Lys Glu Arg
 85 90 95

Glu Glu Lys Val Arg Glu Glu Tyr Glu Glu Ile Leu Asn Thr Lys Leu
 100 105 110

Ala Glu Gln Tyr Asp Ala Phe Val Lys Phe Thr His Asp Gln Ile Met
 115 120 125

Arg Arg Tyr Gly Glu Gln Pro Ala Ser Tyr Val Ser
 130 135 140

<210> 123

<211> 806

<212> DNA

<213> Homo sapiens

<400> 123

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<210> 124

<211> 55

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (46)

<400> 124

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 1 5 10 15

83.

Leu Ala Ser Arg Arg Phe Gln Ala Trp Gly Ser Thr Lys Val Val Arg
 20 25 30

Thr Phe Gln Asp Ile Pro Gln Asn Tyr Val Tyr Val Gln Xaa Ala Leu
 35 40 45

Trp Phe Ala Ile Glu Gly Val
 50 55

<210> 125

<211> 1783

<212> DNA

<213> Homo sapiens

<400> 125

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<210> 126

<211> 136

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (108)

<400> 126

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His Pro Gln Ser Leu Leu Phe Val
130 135

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<210> 127
<211> 3149
<212> DNA
<213> Homo sapiens
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| ctgtccttc | tgtttcgcag | atgaggaaac | tgaggccttag | agaagtttg | caaattggct | 120 |
| aagttcctac | agctaccaca | gcagaaagt | ctgggcagta | gagagctgcc | ccctccagaa | 180 |
| gatgatcagc | tgcactccag | tgcccccaga | tctctgtgga | aggaacggat | ccttaaagca | 240 |
| aaggtgggtga | cgttgtctca | ggaggcagar | tgggatacaa | tcgagccctt | gcttagaagt | 300 |
| gaattagaag | attttccagt | acttggaaatt | gactgtgagt | gggtaaattt | ggaaggcaaa | 360 |
| gcctgccttc | tgtcacttct | acaaattggcc | tccccaaagt | gcctgtgtgt | cttggttcgc | 420 |
| ctgccccagc | taatctgtgg | aggaaaaaca | ctaccaagaa | cgttatttga | tattttggca | 480 |
| gatggcacca | ttttgaaagt | tggagtggga | tgctcagaag | atgccagcaa | gcttctgcag | 540 |
| gattatggcc | tcgttgttag | ggggtgcctg | gacctccgat | acctagccat | gcggcagaga | 600 |
| aacaatttgc | tctgtaatat | gcttagcctg | aagtcctctg | ctgagactgt | tttgaacttt | 660 |
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| taagaagtct | aagatggatg | ggatggtgcc | aggcaaccac | caagggagag | accccagaaa | 1020 |
| acataaaaaga | aagcctctgg | gggtgggcta | ttctgccaga | aatcacctc | tttatgataa | 1080 |
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| gctctgcacc | tctgccatg | ccattttcaa | ctactatgac | aacctctga | agcagcagct | 1440 |
| ggccaaggag | ttccaggccc | ccatcggctc | tgaggagggc | ttgcgcctgc | tggaagatcc | 1500 |
| tgagcgccgg | caggtgcgtt | ctggggccag | ggccctgctc | aacgcggaga | gcctgcctac | 1560 |
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| agaggagatg | cttcaagagg | ctgccagcct | ggagaccaga | atctccaatg | aaaactatgt | 1680 |
| tcttcacggg | ctgaaggctg | tgcagtgtca | cagccagggt | ggcctgcgct | ccctcatgca | 1740 |
| gcctggagag | cgctggcgct | agaccttctt | ggactccatg | cagcccaagc | acctgcccc | 1800 |
| gcagtggtca | gtggaccaca | accatcaaaa | gctgctccgg | aaattccggg | aaagatcttc | 1860 |


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<210> 128

<211> 380

<212> PRT

<213> Homo sapiens

<400> 128

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Leu Asp Thr Leu Ser Leu Gly Ile His Leu Glu Lys Lys Asn Asp Asp
  20             25             30

His Ser Ser Trp Arg Lys Val Leu Glu Lys Cys Gln Gly Val Val Asp
  35             40             45

Ile Pro Phe Arg Ser Lys Gly Met Ser Arg Leu Gly Glu Glu Val Asn
  50             55             60

Gly Glu Ala Thr Glu Ser Gln Gln Lys Pro Arg Asn Lys Lys Ser Lys
  65             70             75             80

Met Asp Gly Met Val Pro Gly Asn His Gln Gly Arg Asp Pro Arg Lys
  85             90             95

His Lys Arg Lys Pro Leu Gly Val Gly Tyr Ser Ala Arg Lys Ser Pro
  100            105            110

Leu Tyr Asp Asn Cys Phe Leu His Ala Pro Asp Gly Gln Pro Leu Cys
  115            120            125

Thr Cys Asp Arg Arg Lys Ala Gln Trp Tyr Leu Asp Lys Gly Ile Gly
  130            135            140

Glu Leu Val Ser Glu Glu Pro Phe Val Val Lys Leu Arg Phe Glu Pro
  145            150            155            160

Ala Gly Arg Pro Glu Ser Pro Gly Asp Tyr Tyr Leu Met Val Lys Glu
  165            170            175

```

Asn Leu Cys Val Val Cys Gly Lys Arg Asp Ser Tyr Ile Arg Lys Asn
 180 185 190
 Val Ile Pro His Glu Tyr Arg Lys His Phe Pro Ile Glu Met Lys Asp
 195 200 205
 His Asn Ser His Asp Val Leu Leu Leu Cys Thr Ser Cys His Ala Ile
 210 215 220
 Ser Asn Tyr Tyr Asp Asn His Leu Lys Gln Gln Leu Ala Lys Glu Phe
 225 230 235 240
 Gln Ala Pro Ile Gly Ser Glu Glu Gly Leu Arg Leu Leu Glu Asp Pro
 245 250 255
 Glu Arg Arg Gln Val Arg Ser Gly Ala Arg Ala Leu Leu Asn Ala Glu
 260 265 270
 Ser Leu Pro Thr His Arg Lys Glu Glu Leu Leu Gln Ala Leu Arg Glu
 275 280 285
 Phe Tyr Asn Thr Asp Val Val Thr Glu Glu Met Leu Gln Glu Ala Ala
 290 295 300
 Ser Leu Glu Thr Arg Ile Ser Asn Glu Asn Tyr Val Pro His Gly Leu
 305 310 315 320
 Lys Val Val Gln Cys His Ser Gln Gly Gly Leu Arg Ser Leu Met Gln
 325 330 335
 Leu Glu Ser Arg Trp Arg Gln His Phe Leu Asp Ser Met Gln Pro Lys
 340 345 350
 His Leu Pro Gln Gln Trp Ser Val Asp His Asn His Gln Lys Leu Leu
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 Arg Lys Phe Gly Glu Asp Leu Pro Ile Gln Leu Ser
 370 375 380

<210> 129

<211> 1861

<212> DNA

<213> Homo sapiens

<400> 129

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a                                                                 1861

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<210> 130
 <211> 571
 <212> PRT
 <213> Homo sapiens

<220>
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 <222> (202)

<220>
 <221> UNSURE
 <222> (504)

<400> 130
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 35 40 45
 Phe Leu Val Glu Leu Tyr Gly Asn Ser Leu Leu Leu Thr Ala Val Tyr
 50 55 60
 Gly Leu Val Val Ala Gly Ser Val Leu Val Leu Gly Ala Ile Ile Gly
 65 70 75 80
 Asp Trp Val Asp Lys Asn Ala Arg Leu Lys Val Ala Gln Thr Ser Leu
 85 90 95
 Val Val Gln Asn Val Ser Val Ile Leu Cys Gly Ile Ile Leu Met Met
 100 105 110
 Val Phe Leu His Lys His Glu Leu Leu Thr Met Tyr His Gly Trp Val
 115 120 125
 Leu Thr Ser Cys Tyr Ile Leu Ile Ile Thr Ile Ala Asn Ile Ala Asn
 130 135 140
 Leu Ala Ser Thr Ala Thr Ala Ile Thr Ile Gln Arg Asp Trp Ile Val
 145 150 155 160

Val Val Ala Gly Glu Asp Arg Ser Lys Leu Ala Asn Met Asn Ala Thr
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 Ile Arg Arg Ile Asp Gln Leu Thr Asn Ile Leu Ala Pro Met Ala Val
 180 185 190
 Gly Gln Ile Met Thr Phe Gly Ser Pro Xaa Ile Gly Cys Gly Phe Ile
 195 200 205
 Ser Gly Trp Asn Leu Val Ser Met Cys Val Glu Tyr Val Leu Leu Trp
 210 215 220
 Lys Val Tyr Gln Lys Thr Pro Ala Leu Ala Val Lys Ala Gly Leu Lys
 225 230 235 240
 Glu Glu Glu Thr Glu Leu Lys Gln Leu Asn Leu His Lys Asp Thr Glu
 245 250 255
 Pro Lys Pro Leu Glu Gly Thr His Leu Met Gly Val Lys Asp Ser Asn
 260 265 270
 Ile His Glu Leu Glu His Glu Gln Glu Pro Thr Cys Ala Ser Gln Met
 275 280 285
 Ala Glu Pro Phe Arg Thr Phe Arg Asp Gly Trp Val Ser Tyr Tyr Asn
 290 295 300
 Gln Pro Val Phe Leu Ala Gly Met Gly Leu Ala Phe Leu Tyr Met Thr
 305 310 315 320
 Val Leu Gly Phe Asp Cys Ile Thr Thr Gly Tyr Ala Tyr Thr Gln Gly
 325 330 335
 Leu Ser Gly Ser Ile Leu Ser Ile Leu Met Gly Ala Ser Ala Ile Thr
 340 345 350
 Gly Ile Met Gly Thr Val Ala Phe Thr Trp Leu Arg Arg Lys Cys Gly
 355 360 365
 Leu Val Arg Thr Gly Leu Ile Ser Gly Leu Ala Gln Leu Ser Cys Leu
 370 375 380
 Ile Leu Cys Val Ile Ser Val Phe Met Pro Gly Ser Pro Leu Asp Leu
 385 390 395 400
 Ser Val Ser Pro Phe Glu Asp Ile Arg Ser Arg Phe Ile Gln Gly Glu
 405 410 415
 Ser Ile Thr Pro Thr Lys Ile Pro Glu Ile Thr Thr Glu Ile Tyr Met
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 Ser Val Pro Ile Ile Ser Val Ser Leu Leu Phe Ala Gly Val Ile Ala
 450 455 460
 Ala Arg Ile Gly Leu Trp Ser Phe Asp Leu Thr Val Thr Gln Leu Leu
 465 470 475 480
 Gln Glu Asn Val Ile Glu Ser Glu Arg Gly Ile Ile Asn Gly Val Gln
 485 490 495

Asn Ser Met Asn Tyr Leu Leu Xaa Leu Leu His Phe Ile Met Val Ile
500 505 510

Leu Ala Pro Asn Pro Glu Ala Phe Gly Leu Leu Val Leu Ile Ser Val
515 520 525

Ser Phe Val Ala Met Gly His Ile Met Tyr Phe Arg Phe Ala Gln Asn
530 535 540

Thr Leu Gly Asn Lys Leu Phe Ala Cys Gly Pro Asp Ala Lys Glu Val
545 550 555 560

Arg Lys Glu Asn Gln Ala Asn Thr Ser Val Val
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<210> 131

<211> 2157

<212> DNA

<213> Homo sapiens

<400> 131

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<210> 132

<211> 270

90

<212> PRT

<213> Homo sapiens

<400> 132

Met Ile Pro Asn Leu Asp Leu Asn Leu Asp Arg Asp Leu Val Leu Pro
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Asp Val Ser Tyr Gln Val Glu Ser Ser Glu Glu Asp Gln Ser Gln Thr
 20 25 30

Met Asp Pro Gln Gly Gln Thr Leu Leu Leu Phe Leu Phe Val Asp Phe
 35 40 45

His Ser Ala Phe Pro Val Gln Gln Met Glu Ile Trp Gly Val Tyr Thr
 50 55 60

Leu Leu Thr Thr His Leu Asn Ala Ile Leu Val Glu Ser His Ser Val
 65 70 75 80

Val Gln Gly Ser Ile Gln Phe Thr Val Asp Lys Val Leu Glu Gln His
 85 90 95

His Gln Ala Ala Lys Ala Gln Gln Lys Leu Gln Ala Ser Leu Ser Val
 100 105 110

Ala Val Asn Ser Ile Met Ser Ile Leu Thr Gly Ser Thr Arg Ser Ser
 115 120 125

Phe Arg Lys Met Cys Leu Gln Thr Leu Gln Ala Ala Asp Thr Gln Glu
 130 135 140

Phe Arg Thr Lys Leu His Lys Val Phe Arg Glu Ile Thr Gln His Gln
 145 150 155 160

Phe Leu His His Cys Ser Cys Glu Val Lys Gln Leu Thr Leu Glu Lys
 165 170 175

Lys Asp Ser Ala Gln Gly Thr Glu Asp Ala Pro Asp Asn Ser Ser Leu
 180 185 190

Glu Leu Leu Ala Val Leu Lys Gln Pro Ser Gln Pro Thr Ala Ala Gly
 195 200 205

Val Gln Gln Leu Ser His Ser Val Thr Ser Arg Asp Ala Arg Tyr Gln
 210 215 220

Arg Ala Ser Arg Lys Gln Glu Ala Gln Glu Gly Gln Pro Pro His Arg
 225 230 235 240

Gly Asp Ala Ser Ser Ala Leu Cys Gln Gly Pro Glu Pro Val Arg Gly
 245 250 255

Arg Pro Ala Pro Pro Gly Ser His Arg Gly Pro Pro His Ser
 260 265 270

<210> 133

<211> 1607

<212> DNA

<213> Homo sapiens

<400> 133

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<210> 134

<211> 217

<212> PRT

<213> Homo sapiens

<400> 134

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Met Val Leu Val Asn Thr Ile Tyr Phe Lys Gly Gln Trp Gln Asn Lys
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```

```

Phe Gln Val Arg Glu Thr Val Lys Ser Pro Phe Gln Leu Ser Glu Gly
  20                      25                      30

```

```

Lys Asn Val Thr Val Glu Met Met Tyr Gln Ile Gly Thr Phe Lys Leu
  35                      40                      45

```

```

Ala Phe Val Lys Glu Pro Gln Met Gln Val Leu Glu Leu Pro Tyr Val
  50                      55                      60

```

```

Asn Asn Lys Leu Ser Met Ile Ile Leu Leu Pro Val Gly Ile Ala Asn
  65                      70                      75                      80

```

```

Leu Lys Gln Ile Glu Lys Gln Leu Asn Ser Gly Thr Phe His Glu Trp
  85                      90                      95

```

```

Thr Ser Ser Ser Asn Met Met Glu Arg Glu Val Glu Val His Leu Pro
 100                      105                      110

```

```

Arg Phe Lys Leu Glu Ile Lys Tyr Glu Leu Asn Ser Leu Leu Lys Pro
 115                      120                      125

```

```

Leu Gly Val Thr Asp Leu Phe Asn Gln Val Lys Ala Asp Leu Ser Gly
 130                      135                      140

```

92

Met Ser Pro Thr Lys Gly Leu Tyr Leu Ser Lys Ala Ile His Lys Ser
 145 150 155 160

Tyr Leu Asp Val Ser Glu Glu Gly Thr Glu Ala Ala Ala Ala Thr Gly
 165 170 175

Asp Ser Ile Ala Val Lys Ser Leu Pro Met Arg Ala Gln Phe Lys Ala
 180 185 190

Asn His Pro Phe Leu Phe Phe Ile Arg His Thr His Thr Asn Thr Ile
 195 200 205

Leu Phe Cys Gly Lys Leu Ala Ser Pro
 210 215

<210> 135

<211> 1537

<212> DNA

<213> Homo sapiens

<400> 135

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<210> 136

<211> 86

<212> PRT

<213> Homo sapiens

<400> 136

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His Val Pro Arg Ala Tyr Arg Asp Pro Thr Leu Phe Arg Ala Phe Leu
 35 40 45

Pro Pro Ala Arg Ala Gln Leu Pro Pro Ala Trp Ala Asn Leu Leu Gln
 50 55 60

Gly Ser Pro Arg Arg Met Gly Thr Arg Lys Ala Val Asp Pro His Leu
 65 70 75 80

Gln Gly Ala Phe Pro Ala
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 <211> 1302
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 <213> Homo sapiens

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<210> 138
 <211> 339
 <212> PRT
 <213> Homo sapiens

<400> 138
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Met Glu Leu Ser Lys Ala Phe Ser Gly Gln Arg Thr Leu Leu Ser Ala
 20 25 30

Ile Leu Ser Met Leu Ser Leu Ser Phe Ser Thr Thr Ser Leu Leu Ser
 35 40 45

Asn Tyr Trp Phe Val Gly Thr Gln Lys Val Pro Lys Pro Leu Cys Glu
 50 55 60

Lys Gly Leu Ala Ala Lys Cys Phe Asp Met Pro Val Ser Leu Asp Gly
 65 70 75 80

Asp Thr Asn Thr Ser Thr Gln Glu Val Val Gln Tyr Asn Trp Glu Thr
 85 90 95
 Gly Asp Asp Arg Phe Ser Phe Arg Ser Phe Arg Ser Gly Met Trp Leu
 100 105 110
 Ser Cys Glu Glu Thr Val Glu Glu Pro Gly Glu Arg Cys Arg Ser Phe
 115 120 125
 Ile Glu Leu Thr Pro Pro Ala Lys Arg Glu Ile Leu Trp Leu Ser Leu
 130 135 140
 Gly Thr Gln Ile Thr Tyr Ile Gly Leu Gln Phe Ile Ser Phe Leu Leu
 145 150 155 160
 Leu Leu Thr Asp Leu Leu Leu Thr Gly Asn Pro Ala Cys Gly Leu Lys
 165 170 175
 Leu Ser Ala Phe Ala Ala Val Ser Ser Val Leu Ser Gly Leu Leu Gly
 180 185 190
 Met Val Ala His Met Met Tyr Ser Gln Val Phe Gln Ala Thr Val Asn
 195 200 205
 Leu Gly Pro Glu Asp Trp Arg Pro His Val Trp Asn Tyr Gly Trp Ala
 210 215 220
 Phe Tyr Met Ala Trp Leu Ser Phe Thr Cys Cys Met Ala Ser Ala Val
 225 230 235 240
 Thr Thr Phe Asn Thr Tyr Thr Arg Met Val Leu Glu Phe Lys Cys Lys
 245 250 255
 His Ser Lys Ser Phe Lys Glu Asn Pro Asn Cys Leu Pro His His His
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 Gln Cys Phe Pro Arg Arg Leu Ser Ser Ala Ala Pro Thr Val Gly Pro
 275 280 285
 Leu Thr Ser Tyr His Gln Tyr His Asn Gln Pro Ile His Ser Val Ser
 290 295 300
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<210> 139

<211> 3184

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (1644)

<400> 139

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<210> 140

<211> 454

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (442)

<400> 140

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 Pro Leu Ile Gly Ala Leu Ser Asp Val Trp Gly Arg Lys Pro Phe Leu
 35 40 45
 Leu Gly Thr Val Phe Phe Thr Cys Phe Pro Ile Pro Leu Met Arg Ile
 50 55 60
 Ser Pro Trp Trp Tyr Phe Ala Met Ile Ser Val Ser Gly Val Phe Ser
 65 70 75 80
 Val Thr Phe Ser Val Ile Phe Ala Tyr Val Ala Asp Val Thr Gln Glu
 85 90 95
 His Glu Arg Ser Thr Ala Tyr Gly Trp Val Ser Ala Thr Phe Ala Ala
 100 105 110
 Ser Leu Val Ser Ser Pro Ala Ile Gly Ala Tyr Leu Ser Ala Ser Tyr
 115 120 125
 Gly Asp Ser Leu Val Val Leu Val Ala Thr Val Val Ala Leu Leu Asp
 130 135 140
 Ile Cys Phe Ile Leu Val Ala Val Pro Glu Ser Leu Pro Glu Lys Met
 145 150 155 160
 Arg Pro Val Ser Trp Gly Ala Gln Ile Ser Trp Lys Gln Ala Asp Pro
 165 170 175
 Phe Ala Ser Leu Lys Lys Val Gly Lys Asp Ser Thr Val Leu Leu Ile
 180 185 190
 Cys Ile Thr Val Phe Leu Ser Tyr Leu Pro Glu Ala Gly Gln Tyr Ser
 195 200 205
 Ser Phe Phe Leu Tyr Leu Arg Gln Val Ile Gly Phe Gly Ser Val Lys
 210 215 220
 Ile Ala Ala Phe Ile Ala Met Val Gly Ile Leu Ser Ile Val Ala Gln
 225 230 235 240
 Thr Ala Phe Leu Ser Ile Leu Met Arg Ser Leu Gly Asn Lys Asn Thr
 245 250 255
 Val Leu Leu Gly Leu Gly Phe Gln Met Leu Gln Leu Ala Trp Tyr Gly
 260 265 270
 Phe Gly Ser Gln Ala Trp Met Met Trp Ala Ala Gly Thr Val Ala Ala
 275 280 285
 Met Ser Ser Ile Thr Phe Pro Ala Ile Ser Ala Leu Val Ser Arg Asn
 290 295 300

97,

Ala Glu Ser Asp Gln Gln Gly Val Ala Gln Gly Ile Ile Thr Gly Ile
305 310 315 320

Arg Gly Leu Cys Asn Gly Leu Gly Pro Ala Leu Tyr Gly Phe Ile Phe
325 330 335

Tyr Met Phe His Val Glu Leu Thr Glu Leu Gly Pro Lys Leu Asn Ser
340 345 350

Asn Asn Val Pro Leu Gln Gly Ala Val Ile Pro Gly Pro Pro Phe Leu
355 360 365

Phe Gly Ala Cys Ile Val Leu Met Ser Phe Leu Val Ala Leu Phe Ile
370 375 380

Pro Glu Tyr Ser Lys Ala Ser Gly Val Gln Lys His Ser Asn Ser Ser
385 390 395 400

Ser Gly Ser Leu Thr Asn Thr Pro Glu Arg Gly Ser Asp Glu Asp Ile
405 410 415

Glu Pro Leu Leu Gln Asp Ser Ser Ile Trp Glu Leu Ser Ser Phe Glu
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Glu Pro Gly Asn Gln Cys Thr Glu Leu Xaa Thr Arg Gln Lys Val Gly
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Phe Cys Ile Arg His Leu
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<210> 141

<211> 2481

<212> DNA

<213> Homo sapiens

<400> 141

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<210> 142

<211> 475

<212> PRT

<213> Homo sapiens

<400> 142

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```

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```

```

Trp Glu Val Asp Trp Phe Ser Leu Ala Ser Val Ile Phe Leu Leu Leu
    35             40             45

```

```

Phe Ala Pro Phe Ile Val Tyr Tyr Phe Ile Met Ala Cys Asp Gln Tyr
    50             55             60

```

```

Ser Cys Ala Leu Thr Gly Pro Val Val Asp Ile Val Thr Gly His Ala
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```

```

Arg Leu Ser Asp Ile Trp Ala Lys Thr Pro Pro Ile Thr Arg Lys Ala
      85             90             95

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```

Ala Gln Leu Tyr Thr Leu Trp Val Thr Phe Gln Val Leu Leu Tyr Thr
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```

Ser Leu Pro Asp Phe Cys His Lys Phe Leu Pro Gly Tyr Val Gly Gly
    115             120             125

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```

Ile Gln Glu Gly Ala Val Thr Pro Ala Gly Val Val Asn Lys Tyr Gln
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Ile Asn Gly Leu Gln Ala Trp Leu Leu Thr His Leu Leu Trp Phe Ala
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Asn Ala His Leu Leu Ser Trp Phe Ser Pro Thr Ile Ile Phe Asp Asn
    165             170             175

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```

Trp Ile Pro Leu Leu Trp Cys Ala Asn Ile Leu Gly Tyr Ala Val Ser
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```

Thr Phe Ala Met Val Lys Gly Tyr Phe Phe Pro Thr Ser Ala Arg Asp
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Cys Lys Phe Thr Gly Asn Phe Phe Tyr Asn Tyr Met Met Gly Ile Glu
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 Val Ala Asn His Gln Lys Asp Leu Phe Arg Arg Thr Asp Gly Arg Cys
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<210> 143

<211> 1518

<212> DNA

<213> Homo sapiens

<400> 143

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aaaaaaaaa aaaaaaaaaa 1518

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<210> 144

<211> 55

<212> PRT

<213> Homo sapiens

<400> 144

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Met Val Leu Thr His Leu His Phe Leu Ser Ser Gln Arg Val Gln Ser
  1              5              10              15

```

```

Arg Gly Arg Ala Cys Ile Gly Ile Gln Val Leu Leu Val Leu Leu Trp
      20              25              30

```

```

Ser Trp Ser Asn Ser Val Ser Trp His Arg Thr Arg Leu Gly Leu His
  35              40              45

```

```

Cys Ala Val Cys Phe Thr Ala
  50              55

```

<210> 145

<211> 2097

<212> DNA

<213> Homo sapiens

<400> 145

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cagtcctccc acctcagctt cccaaagctc tgggattata ggcagtagcc actgtacctg 180
tccacctgag aaattttcta agcctggatt cagtcttatg aaatataata ctttgaaatg 240
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atcttgataa ctaaattttg ccaatcattc ttcttgacta gtggtcttta tatatacata 420
catatatata tatatatata tatatatata tatgaggaat tttccataag tgacttgaaa 480
aatacagaat gcactccatg gtaggtctgt tcagtgttat caggaatact gtttctcatc 540
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gagcccaaga ttattgagga gttcaaatat gtgaaagcag aaatgcaaaa gcacggagaa 720
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```


101,

```

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```

<210> 146

<211> 398

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (379)

<400> 146

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Val Leu Ser Gly Ile Leu Phe Leu Ile Phe Leu Ser Trp Cys Pro Phe
  1             5             10             15

```

```

Ala Gly Val Val Phe Ala His Tyr Gly Pro Val Trp Arg Gln Gln Arg
  20             25             30

```

```

Lys Phe Ser His Ser Thr Leu Arg His Phe Gly Leu Gly Lys Leu Ser
  35             40             45

```

```

Leu Glu Pro Lys Ile Ile Glu Glu Phe Lys Tyr Val Lys Ala Glu Met
  50             55             60

```

```

Gln Lys His Gly Glu Asp Pro Phe Cys Pro Phe Ser Ile Ile Ser Asn
  65             70             75             80

```

```

Ala Val Ser Asn Ile Ile Cys Ser Leu Cys Phe Gly Gln Arg Phe Asp
  85             90             95

```

```

Tyr Thr Asn Ser Glu Phe Lys Lys Met Leu Gly Phe Met Ser Arg Gly
 100             105             110

```

```

Leu Glu Ile Cys Leu Asn Ser Gln Val Leu Leu Val Asn Ile Cys Pro
 115             120             125

```

```

Trp Leu Tyr Tyr Leu Pro Phe Gly Pro Phe Lys Glu Leu Arg Gln Ile
 130             135             140

```

```

Glu Lys Asp Ile Thr Ser Phe Leu Lys Lys Ile Ile Lys Asp His Gln
 145             150             155             160

```

102

Glu Ser Leu Asp Arg Glu Asn Pro Gln Asp Phe Ile Asp Met Tyr Leu
 165 170 175
 Leu His Met Glu Glu Glu Arg Lys Asn Asn Ser Asn Ser Ser Phe Asp
 180 185 190
 Glu Glu Tyr Leu Phe Tyr Ile Ile Gly Asp Leu Phe Ile Ala Gly Thr
 195 200 205
 Asp Thr Thr Thr Asn Ser Leu Leu Trp Cys Leu Leu Tyr Met Ser Leu
 210 215 220
 Asn Pro Asp Val Gln Glu Lys Val His Glu Glu Ile Glu Arg Val Ile
 225 230 235 240
 Gly Ala Asn Arg Ala Pro Ser Leu Thr Asp Lys Ala Gln Met Pro Tyr
 245 250 255
 Thr Glu Ala Thr Ile Met Glu Val Gln Arg Leu Thr Val Val Val Pro
 260 265 270
 Leu Ala Ile Pro His Met Thr Ser Glu Asn Thr Val Leu Gln Gly Tyr
 275 280 285
 Thr Ile Pro Lys Gly Thr Leu Ile Leu Pro Asn Leu Trp Ser Val His
 290 295 300
 Arg Asp Pro Ala Ile Trp Glu Lys Pro Glu Asp Phe Tyr Pro Asn Arg
 305 310 315 320
 Phe Leu Asp Asp Gln Gly Gln Leu Ile Lys Lys Glu Thr Phe Ile Pro
 325 330 335
 Phe Gly Ile Gly Lys Arg Val Cys Met Gly Glu Gln Leu Ala Lys Met
 340 345 350
 Glu Leu Phe Leu Met Phe Val Ser Leu Met Gln Ser Phe Ala Phe Ala
 355 360 365
 Leu Pro Glu Asp Ser Lys Lys Pro Leu Leu Xaa Gly Arg Phe Gly Leu
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 Thr Leu Ala Pro His Pro Phe Asn Ile Thr Ile Ser Arg Arg
 385 390 395

<210> 147

<211> 2504

<212> DNA

<213> Homo sapiens

<400> 147

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 cttttcaaga ttggatcaga gctcatctcc atccagtcct gtttctatga aggcttcaat 360
 ctgtttccat gcaaatgtgc taatcagagc ccagagctgc tgggtccctc atctccctca 420
 tctattatag attgacttac agcagggaga gaatctcttt agctcattcc taatgggggt 480
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103

```

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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 2504

```

<210> 148

<211> 66

<212> PRT

<213> Homo sapiens

<400> 148

```

Met Glu Arg Glu Pro Leu Cys Leu Trp Gln Tyr His Leu Glu Arg Ser
  1      5      10      15

```

```

Thr Ser Tyr Leu Gln Ala Phe Ser Pro Gly Leu Leu Ile Val Ser Val
  20      25      30

```

```

Pro Pro Phe Leu Ser Ser Leu Gln Met Pro Ser Arg Gly Tyr Leu Ile
  35      40      45

```

```

Leu Val Leu Phe Leu Cys Gly Phe Leu Gly Ser Arg Asp Leu Glu Phe
  50      55      60

```

```

Pro Phe
  65

```

<210> 149

<211> 928

<212> DNA

<213> Homo sapiens

<400> 149

104

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caacctaattg gatggagaga gactatgtct ctaaaaataa aaaataaaga gattaggaac 240
tgtctgcact aagatgactt tactattcca agaaatcctt gcctaagaaa gtaaagttga 300
aattactttt ttgtcctgga aactttccga tctatgtatc tgtactcata cagcctcatc 360
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ccaaagctta caaatatccc acccttgact cccttttctg aggctactaa gattatgtga 600
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aaacaaagtc aaaagacaac tgacaaccag gttaaaaaca tgctttcaac atatattaca 840
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aagcacccat tagaaaaaaa aaaaaaaa

```

<210> 150

<211> 88

<212> PRT

<213> Homo sapiens

<400> 150

```

Met Tyr Leu Tyr Ser Tyr Ser Leu Ile Gly Leu Asn Ser Leu Leu Phe
  1             5             10             15

```

```

Arg Thr Val Asp His Ser Thr Gly Phe Ser Ser Asp Cys Leu Pro Phe
      20             25             30

```

```

Lys Ala Gly Phe Ile Gly Leu Ala Ser Leu Tyr Pro Ala Ile Gln Thr
    35             40             45

```

```

Leu Pro Tyr Pro Ser Gln Asp Cys Thr Pro His Val Glu Arg His Thr
    50 *           55             60

```

```

Leu Glu Pro Asp Ser Pro Lys Leu Thr Asn Ile Pro Pro Leu Thr Pro
    65             70             75             80

```

```

Phe Ser Glu Ala Thr Lys Ile Met
      85

```

<210> 151

<211> 1343

<212> DNA

<213> Homo sapiens

<400> 151

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ggggagtggt tgcgtttctt ctccgttttg cagtgaacaa catctcagaa aggtggagct 180
gatcagaata atgttcagca tcaacccctt ggagaacctg aaggtgtaca tcagcagtcg 240
gcctccccctg gtggtcttca tgatcagcgt aagcgccatg gccatagctt tcctgaccct 300
gggctacttc ttcaaaatca aggagattaa atccccagaa atggcagagg attggaatac 360
ttttctgcta cggttcaatg atttggactt gtgtgtatca gagaatgaaa ccctcaagca 420
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cctaaccctg gaccactga aacccttcgg agggattcc cgcaacgtca ccatctgtga 600
ctcaaccatc ttagggcac agattggact ttcaggcagg gaagcccacg aggagataaa 660
catcaccttc accctgccta cagcgtggag ctcatatgac tgcgccctcc acggctactg 720
tgagcaggtg gtattcacag cctgcatgac cctcacggcc agccctgggg tggtccccgt 780
cactgtacag ccaccgcact gtgttcctga cacgtacagc aacgccacgc tctggtacaa 840

```

105

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 aaaaaaaaaa aaaaaaaaaa aaa 1343

<210> 152

<211> 314

<212> PRT

<213> Homo sapiens

<400> 152

Met Phe Ser Ile Asn Pro Leu Glu Asn Leu Lys Val Tyr Ile Ser Ser
 1 5 10 15

Arg Pro Pro Leu Val Val Phe Met Ile Ser Val Ser Ala Met Ala Ile
 20 25 30

Ala Phe Leu Thr Leu Gly Tyr Phe Phe Lys Ile Lys Glu Ile Lys Ser
 35 40 45

Pro Glu Met Ala Glu Asp Trp Asn Thr Phe Leu Leu Arg Phe Asn Asp
 50 55 60

Leu Asp Leu Cys Val Ser Glu Asn Glu Thr Leu Lys His Leu Thr Asn
 65 70 75 80

Asp Thr Thr Thr Pro Glu Ser Thr Met Thr Ser Gly Gln Ala Arg Ala
 85 90 95

Ser Thr Gln Ser Pro Gln Ala Leu Glu Asp Ser Gly Pro Val Asn Ile
 100 105 110

Ser Val Ser Ile Thr Leu Thr Leu Asp Pro Leu Lys Pro Phe Gly Gly
 115 120 125

Tyr Ser Arg Asn Val Thr His Leu Tyr Ser Thr Ile Leu Gly His Gln
 130 135 140

Ile Gly Leu Ser Gly Arg Glu Ala His Glu Glu Ile Asn Ile Thr Phe
 145 150 155 160

Thr Leu Pro Thr Ala Trp Ser Ser Asp Asp Cys Ala Leu His Gly His
 165 170 175

Cys Glu Gln Val Val Phe Thr Ala Cys Met Thr Leu Thr Ala Ser Pro
 180 185 190

Gly Val Phe Pro Val Thr Val Gln Pro Pro His Cys Val Pro Asp Thr
 195 200 205

Tyr Ser Asn Ala Thr Leu Trp Tyr Lys Ile Phe Thr Thr Ala Arg Asp
 210 215 220

Ala Asn Thr Lys Tyr Ala Gln Asp Tyr Asn Pro Phe Trp Cys Tyr Lys
 225 230 235 240

106,

Gly Ala Ile Gly Lys Val Tyr His Ala Leu Asn Pro Lys Leu Thr Val
 245 250 255

Ile Val Pro Asp Asp Arg Ser Leu Ile Asn Leu His Leu Met His
 260 265 270

Thr Ser Tyr Phe Leu Phe Val Met Val Ile Thr Met Phe Cys Tyr Ala
 275 280 285

Val Ile Lys Gly Arg Pro Ser Lys Leu Arg Gln Ser Asn Pro Glu Phe
 290 295 300

Cys Pro Glu Lys Val Ala Leu Ala Glu Ala
 305 310

<210> 153

<211> 3343

<212> DNA

<213> Homo sapiens

<400> 153

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gtgctcgggc cgcgcgggag cccactgtgg ggctcgggca tggcgggccc caggacctga 180
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107.

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<210> 154

<211> 389

<212> PRT

<213> Homo sapiens

<400> 154

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Met Trp Ile Lys Phe Ser Ser Asp Glu Glu Leu Glu Gly Leu Gly Phe
  1             5             10             15

Arg Ala Lys Tyr Ser Phe Ile Pro Asp Pro Asp Phe Thr Tyr Leu Gly
      20             25             30

Gly Ile Leu Asn Pro Ile Pro Asp Cys Gln Phe Glu Leu Ser Gly Ala
  35             40             45

Asp Gly Ile Val Arg Ser Ser Gln Val Glu Gln Glu Glu Lys Thr Lys
  50             55             60

Pro Gly Gln Ala Val Asp Cys Ile Trp Thr Ile Lys Ala Thr Pro Lys
  65             70             75             80

Ala Lys Ile Tyr Leu Arg Phe Leu Asp Tyr Gln Met Glu His Ser Asn
      85             90             95

Glu Cys Lys Arg Asn Phe Val Ala Val Tyr Asp Gly Ser Ser Ser Ile
  100             105             110

Glu Asn Leu Lys Ala Lys Phe Cys Ser Thr Val Ala Asn Asp Val Met
  115             120             125

Leu Lys Thr Gly Ile Gly Val Ile Arg Met Trp Ala Asp Glu Gly Ser
  130             135             140

Arg Leu Ser Arg Phe Arg Met Leu Phe Thr Ser Phe Val Glu Pro Pro
  145             150             155             160

Cys Thr Ser Ser Thr Phe Phe Cys His Ser Asn Met Cys Ile Asn Asn
      165             170             175

Ser Leu Val Cys Asn Gly Val Gln Asn Cys Ala Tyr Pro Trp Asp Glu
      180             185             190

Asn His Cys Lys Glu Lys Lys Lys Ala Gly Val Phe Glu Gln Ile Thr
  195             200             205

```

108,

Lys Thr His Gly Thr Ile Ile Gly Ile Thr Ser Gly Ile Val Leu Val
 210 215 220
 Leu Leu Ile Ile Ser Ile Leu Val Gln Val Lys Gln Pro Arg Lys Lys
 225 230 235 240
 Val Met Ala Cys Lys Thr Ala Phe Asn Lys Thr Gly Phe Gln Glu Val
 245 250 255
 Phe Asp Pro Pro His Tyr Glu Leu Phe Ser Leu Arg Asp Lys Glu Ile
 260 265 270
 Ser Ala Asp Leu Ala Asp Leu Ser Glu Glu Leu Asp Asn Tyr Gln Lys
 275 280 285
 Met Arg Arg Ser Ser Thr Ala Ser Arg Cys Ile His Asp His His Cys
 290 295 300
 Gly Ser Gln Ala Ser Ser Val Lys Gln Ser Arg Thr Asn Leu Ser Ser
 305 310 315 320
 Met Glu Leu Pro Phe Arg Asn Asp Phe Ala Gln Pro Gln Pro Met Lys
 325 330 335
 Thr Phe Asn Ser Thr Phe Lys Lys Ser Ser Tyr Thr Phe Lys Gln Gly
 340 345 350
 His Glu Cys Pro Glu Gln Ala Leu Glu Asp Arg Val Met Glu Glu Ile
 355 360 365
 Pro Cys Glu Ile Tyr Val Arg Gly Arg Glu Asp Ser Ala Gln Ala Ser
 370 375 380
 Ile Ser Ile Asp Phe
 385

<210> 155
 <211> 2991
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> (1270)

<220>
 <221> unsure
 <222> (2613)

<400> 155
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 taacttcatt gagggtcgtg gcacagaaga attacttcaa cattttggat aaaatcgttc 180
 aaaagggttct ttgattaagc gaggattgtg gtgggtcatca agaacctttt cccgattgaa 240
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 caggctgatg gacttcgcgg cttctatoga ggctatgtgg cttcactgct tacctatata 360
 ccaaacagtg ctgtctggtg gcccttctat cacttctatg cagggttgagg gcaagaactc 420
 catcatcctg accttcagac agctgatggc agaagaaggg ccttggggcc tcatgaaagg 480
 cctctcggcc agaatcatct cagccacacc ttccaccatt gtcattgtgg tgggctatga 540
 gagcctcaag aaactcagcc tccgacctga gctggtggac tcgagacact ggtaaccagt 600
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109,

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ccttgccccc actatattaa attctcttct gagctgggct ccctcactca gtccctgtat 840
ttgatactgg cctaaagacc ccacccccca ccttgccagc ccttcttctg gcttcccctt 900
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aaagttttta ttgagccccc gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 2991

```

<210> 156

<211> 95

<212> PRT

<213> Homo sapiens

<400> 156

```

Met Asp Phe Ala Ala Ser Ile Glu Ala Met Trp Leu His Cys Leu Pro
  1             5             10             15

```

```

Ile Ser Gln Thr Val Leu Ser Gly Gly Pro Ser Ile Thr Ser Met Gln
  20             25             30

```

```

Val Glu Gly Lys Asn Ser Ile Ile Leu Thr Phe Arg Gln Leu Met Ala
  35             40             45

```

```

Glu Glu Gly Pro Trp Gly Leu Met Lys Gly Leu Ser Ala Arg Ile Ile
  50             55             60

```

```

Ser Ala Thr Pro Ser Thr Ile Val Ile Val Val Gly Tyr Glu Ser Leu
  65             70             75             80

```

<400> 158
Met Pro Leu Leu Lys Met Pro Pro Pro Phe Ser Gly Cys Ser His Pro
1 5 10 15

111.

Cys Ser Gly His Cys Gly Gly His Cys Ser Gly Pro Leu Leu Pro Pro
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 Pro Ser Ser Gln Pro Leu Pro Ser Thr His Arg Asp Pro Gly Cys Lys
 35 40 45
 Gly His Lys Phe Ala His Ser Gly Leu Ala Cys Gln Leu Pro Gln Pro
 50 55 60
 Cys Glu Ala Asp Glu Gly Leu Gly Glu Glu Glu Asp Ser Ser Ser Glu
 65 70 75 80
 Arg Ser Ser Cys Thr Ser Ser Ser Thr His Gln Arg Asp Gly Lys Phe
 85 90 95
 Cys Asp Cys Cys Tyr Cys Glu Phe Phe Gly His Asn Ala Pro Pro Ala
 100 105 110
 Ala Pro Thr Ser Arg Asn Tyr Thr Glu Ile Arg Glu Lys Leu Arg Ser
 115 120 125
 Arg Leu Thr Arg Arg Lys Glu Glu Leu Pro Met Lys Gly Gly Thr Leu
 130 135 140
 Gly Gly Ile Pro Gly Glu Pro Ala Val Asp His Arg Asp Val Asp Glu
 145 150 155 160
 Leu Leu Glu Phe Ile Asn Ser Thr Glu Pro Lys Val Pro Asn Ser Ala
 165 170 175
 Arg Ala Ala Lys Arg Ala Arg His Lys Leu Lys Lys Lys Glu Lys Glu
 180 185 190
 Lys Ala Gln Leu Ala Ala Glu Ala Leu Lys Gln Ala Asn Arg Val Ser
 195 200 205
 Gly Ser Arg Glu Pro Arg Pro Ala Arg Glu Arg Leu Leu Glu Trp Pro
 210 215 220
 Asp Arg Glu Leu Asp Arg Val Asn Ser Phe Leu Ser Ser Arg Leu Gln
 225 230 235 240
 Glu Ile Lys Asn Thr Val Lys Asp Ser Ile Arg Ala Ser Phe Ser Val
 245 250 255
 Cys Glu Leu Ser Met Asp Ser Asn Gly Phe Ser Lys Glu Gly Ala Ala
 260 265 270
 Glu Pro Glu Pro Gln Ser Leu Pro Pro Ser Asn Leu Ser Xaa Ser Ser
 275 280 285
 Glu Gln Gln Pro Asp Ile Asn Leu Asp Leu Ser Pro Leu Thr Leu Gly
 290 295 300
 Ser Pro Gln Asn His Thr Leu Gln Ala Pro Gly Glu Pro Ala Pro Pro
 305 310 315 320
 Trp Ala Glu Met Arg Gly Pro His Pro Pro Trp Thr Glu Val Arg Gly
 325 330 335

112

Pro Pro Pro Gly Ile Val Pro Glu Asn Gly Leu Val Arg Arg Leu Asn
 340 345 350
 Thr Val Pro Asn Leu Ser Arg Val Ile Trp Val Lys Thr Pro Lys Pro
 355 360 365
 Gly Tyr Pro Ser Ser Glu Glu Pro Ser Ser Lys Glu Val Pro Ser Cys
 370 375 380
 Lys Gln Glu Leu Pro Glu Pro Val Ser Ser Gly Gly Lys Pro Gln Lys
 385 390 395 400
 Gly Lys Arg Gln Gly Ser Gln Ala Lys Lys Ser Glu Ala Ser Pro Ala
 405 410 415
 Pro Arg Pro Pro Ala Ser Leu Glu Val Pro Ser Ala Lys Gly Gln Val
 420 425 430
 Ala Gly Pro Lys Gln Pro Gly Arg Val Leu Glu Leu Pro Lys Val Gly
 435 440 445
 Ser Cys Ala Glu Ala Gly Glu Gly Ser Arg Gly Ser Arg Pro Gly Pro
 450 455 460
 Gly Trp Ala Gly Ser Pro Lys Thr Glu Lys Glu Lys Gly Ser Ser Trp
 465 470 475 480
 Arg Asn Trp Pro Gly Glu Ala Lys Ala Arg Pro Gln Glu Gln Glu Ser
 485 490 495
 Val Gln Pro Pro Gly Pro Ala Arg Pro Gln Ser Leu Pro Gln Gly Lys
 500 505 510
 Gly Arg Ser Arg Arg Ser Arg Asn Lys Gln Glu Lys Pro Ala Ser Ser
 515 520 525
 Leu Asp Asp Val Phe Leu Pro Lys Asp Met Asp Gly Val Glu Met Asp
 530 535 540
 Glu Thr Asp Arg Glu Val Glu Tyr Phe Lys Arg Phe Cys Leu Asp Ser
 545 550 555 560
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 565 570 575
 Leu Lys Lys Thr Thr Pro Ser Thr Ala Gln
 580 585

<210> 159

<211> 1704

<212> DNA

<213> Homo sapiens

<400> 159

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 aaccggtacg tttccgtggg caagtcgtgt gtactcctcg ccatggctca gctccaaaca 180
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 ttccacaaac atgtggagtt tgatttcctt attaagggcc agttttctgcg aatgcccttg 360
 gacaaacaca tggaaatgga gaacatctca tcagaagaag ttgtggaaat agaatacgtg 420

113

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gagaagtata ctgcacccca gccagagcaa tgcattgttcc atgatgactg gatcagttca 480
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tcttctttaa aaaaaaaaaa aaaa 1704

```

<210> 160

<211> 423

<212> PRT

<213> Homo sapiens

<400> 160

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Met Ala Gln Leu Gln Thr Arg Phe Tyr Thr Asp Asn Lys Lys Tyr Ala
 1             5             10             15

Val Asp Asp Val Pro Phe Ser Ile Pro Ala Ala Ser Glu Ile Ala Asp
 20             25             30

Leu Ser Asn Ile Ile Asn Lys Leu Leu Lys Asp Lys Asn Glu Phe His
 35             40             45

Lys His Val Glu Phe Asp Phe Leu Ile Lys Gly Gln Phe Leu Arg Met
 50             55             60

Pro Leu Asp Lys His Met Glu Met Glu Asn Ile Ser Ser Glu Glu Val
 65             70             75             80

Val Glu Ile Glu Tyr Val Glu Lys Tyr Thr Ala Pro Gln Pro Glu Gln
 85             90             95

Cys Met Phe His Asp Asp Trp Ile Ser Ser Ile Lys Gly Ala Glu Glu
100            105            110

Trp Ile Leu Thr Gly Ser Tyr Asp Lys Thr Ser Arg Ile Trp Ser Leu
115            120            125

Glu Gly Lys Ser Ile Met Thr Ile Val Gly His Thr Asp Val Val Lys
130            135            140

Asp Val Ala Trp Val Lys Lys Asp Ser Leu Ser Cys Leu Leu Leu Ser
145            150            155            160

Ala Ser Met Asp Gln Thr Ile Leu Leu Trp Glu Trp Asn Val Glu Arg
165            170            175

```

114

Asn Lys Val Lys Ala Leu His Cys Cys Arg Gly His Ala Gly Ser Val
 180 185 190
 Asp Ser Ile Ala Val Asp Gly Ser Gly Thr Lys Phe Cys Ser Gly Ser
 195 200 205
 Trp Asp Lys Met Leu Lys Ile Trp Ser Thr Val Pro Thr Asp Glu Glu
 210 215 220
 Asp Glu Met Glu Glu Ser Thr Asn Arg Pro Arg Lys Lys Gln Lys Thr
 225 230 235 240
 Glu Gln Leu Gly Leu Thr Arg Thr Pro Ile Val Thr Leu Ser Gly His
 245 250 255
 Met Glu Ala Val Ser Ser Val Leu Trp Ser Asp Ala Glu Glu Ile Cys
 260 265 270
 Ser Ala Ser Trp Asp His Thr Ile Arg Val Trp Asp Val Glu Ser Gly
 275 280 285
 Ser Leu Lys Ser Thr Leu Thr Gly Asn Lys Val Phe Asn Cys Ile Ser
 290 295 300
 Tyr Ser Pro Leu Cys Lys Arg Leu Ala Ser Gly Ser Thr Asp Arg His
 305 310 315 320
 Ile Arg Leu Trp Asp Pro Arg Thr Lys Asp Gly Ser Leu Val Ser Leu
 325 330 335
 Ser Leu Thr Ser His Thr Gly Trp Val Thr Ser Val Lys Trp Ser Pro
 340 345 350
 Thr His Glu Gln Gln Leu Ile Ser Gly Ser Leu Asp Asn Ile Val Lys
 355 360 365
 Leu Trp Asp Thr Arg Ser Cys Lys Ala Pro Leu Tyr Asp Leu Ala Ala
 370 375 380
 His Glu Asp Lys Val Leu Ser Val Asp Trp Thr Asp Thr Gly Leu Leu
 385 390 395 400
 Leu Ser Gly Gly Ala Asp Asn Lys Leu Tyr Ser Tyr Arg Tyr Ser Pro
 405 410 415
 Thr Thr Ser His Val Gly Ala
 420

<210> 161

<211> 2302

<212> DNA

<213> Homo sapiens

<400> 161

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 gcatatcaac aatataatgc agatcaagta taatgctcaa tattagtgac atgagtatca 180
 ctaaattaca tagaaccctg atgggggtttc ctgtgtcgta atccattaaa tcggtggcca 240
 gtgcttgctg ccgtgggttta gtgattgggt gttagaaata aaaactcagg tctatttctt 300
 accagtcagt aacaattttt agagaatgta cttggtatat aatatatgga cttcagggaac 360
 tttattgggg tgggggggta attttgcctt accctgttca ctttcagatg awtaggcttt 420

```

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aattaagtgg tttcagtaat aatgctatac cgagggtgctt gcattgtatt tcataatttt 600
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gccacaagca gactgacaac gtttctagca ggatcagggt agctgtgtcc agaaaaccaa 2220
cgagaaggag tggaaggagg aatgaacgtt tcattctcgt taataaaggc attatcctaa 2280
ttaaaaaaaa aaaaaaaaaa aa 2302

```

<210> 162

<211> 94

<212> PRT

<213> Homo sapiens

<400> 162

```

Met Pro Glu Cys Ile Phe Val Leu Leu Gly Pro Trp Asn Arg Tyr Arg
  1              5              10              15

```

```

Cys Phe Leu Lys Asp Glu Arg Asn Ala Met Gly Ala Leu His Ala Arg
      20              25              30

```

```

Leu Gln Thr Tyr Gln Glu Cys Ile Ile Val Ser Leu Phe Pro Asn Lys
      35              40              45

```

```

Glu Met Arg Val Thr Ser Phe Gly Leu Leu Thr Leu Met Gly Val Ala
      50              55              60

```

```

Cys Leu Leu Leu Leu Ile Ile Val Ser Cys Ser Asp Met Ile His Ser
      65              70              75              80

```

```

Pro Ala Phe Thr Ala Phe His Leu Met Ile Leu Asp Arg Phe
      85              90

```

<210> 163

<211> 1538

<212> DNA

<213> Homo sapiens

116.

<400> 163

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ccccggacrg caagtacctg gcttcctgtg tccagtaccg gttagtggtc cgggatgtga 180
acacccttca gatccttcag ctgtacacgt gcctagacca gatccagcac atcgagtggg 240
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<211> 415

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<213> Homo sapiens

<220>

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<222> (20)

<220>

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<222> (65)

<400> 164

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      20             25             30

Val Arg Asp Val Asn Thr Leu Gln Ile Leu Gln Leu Tyr Thr Cys Leu
      35             40             45

Asp Gln Ile Gln His Ile Glu Trp Ser Ala Asp Ser Leu Phe Ile Leu
      50             55             60

Xaa Ala Met Tyr Lys Arg Gly Leu Val Gln Val Trp Ser Leu Glu Gln
      65             70             75             80

Pro Glu Trp His Cys Lys Ile Asp Glu Gly Ser Ala Gly Leu Val Ala
      85             90             95

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117

Ser Cys Trp Ser Pro Asp Gly Arg His Ile Leu Asn Thr Thr Glu Phe
 100 105 110
 His Leu Arg Ile Thr Val Trp Ser Leu Cys Thr Lys Ser Val Ser Tyr
 115 120 125
 Ile Lys Tyr Pro Lys Ala Cys Leu Gln Gly Ile Thr Phe Thr Arg Asp
 130 135 140
 Gly Arg Tyr Met Ala Leu Ala Glu Arg Arg Asp Cys Lys Asp Tyr Val
 145 150 155 160
 Ser Ile Phe Val Cys Ser Asp Trp Gln Leu Leu Arg His Phe Asp Thr
 165 170 175
 Asp Thr Gln Asp Leu Thr Gly Ile Glu Trp Ala Pro Asn Gly Cys Val
 180 185 190
 Leu Ala Val Trp Asp Thr Cys Leu Glu Val Arg Ile Leu Asn His Val
 195 200 205
 Thr Trp Lys Met Ile Thr Glu Phe Gly His Pro Ala Ala Ile Asn Asp
 210 215 220
 Pro Lys Ile Val Val Tyr Lys Glu Ala Glu Lys Ser Pro Gln Leu Gly
 225 230 235 240
 Leu Gly Cys Leu Ser Phe Pro Pro Pro Arg Ala Gly Ala Gly Pro Leu
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 Pro Ser Ser Glu Ser Lys Tyr Glu Ile Ala Ser Val Pro Val Ser Leu
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 Gln Thr Leu Lys Pro Val Thr Asp Arg Ala Asn Pro Lys Met Gly Ile
 275 280 285
 Gly Met Leu Ala Phe Ser Pro Asp Ser Tyr Phe Leu Ala Thr Arg Asn
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 Asp Asn Ile Pro Asn Ala Val Trp Val Trp Asp Ile Gln Lys Leu Arg
 305 310 315 320
 Leu Phe Ala Val Leu Glu Gln Leu Ser Pro Val Arg Ala Phe Gln Trp
 325 330 335
 Asp Pro Gln Gln Pro Arg Leu Ala Ile Cys Thr Gly Gly Ser Arg Leu
 340 345 350
 Tyr Leu Trp Ser Pro Ala Gly Cys Met Ser Val Gln Val Pro Gly Glu
 355 360 365
 Gly Asp Phe Ala Val Leu Ser Leu Cys Trp His Leu Ser Gly Asp Ser
 370 375 380
 Met Ala Leu Leu Ser Lys Asp His Phe Cys Leu Cys Phe Leu Glu Thr
 385 390 395 400
 Glu Ala Val Val Gly Thr Ala Cys Arg Gln Leu Gly Gly His Thr
 405 410 415

<210> 165

<211> 3178
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> (1653)

<220>
 <221> unsure
 <222> (1767)

<400> 165

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| ttcctaaaca | gacgcacctc | gtagcttgct | gtatgtgttt | attctttatt | gctttcagct | 180 |
| ttggggctgt | aacagggtaca | aatatttggg | ttccctatga | tttatagaga | agaagaagaa | 240 |
| accagcttt | ctatcagagc | actgcaagag | aagagtctta | caoctgccct | cagtgggaga | 300 |
| tgagaatggg | cattatgact | tagagaatgc | tacacgtgta | ggttgctggg | gtgtcctgaa | 360 |
| tccacaggca | taaaagcactc | cccattttcc | tactgtaatg | cagattctcc | ggctcaagg | 420 |
| ctagaatatt | tgatcctaag | atcaagacat | catgcccttc | gaatagtact | gctctttgtt | 480 |
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| aggctctttg | aatttttttg | gttcacttta | ttgacctggg | agcaagggtgc | taattctgtg | 600 |
| gtcagtatct | aatgtttttt | tcagtggagc | tttttctttg | ggccatattt | gccttcta | 660 |
| acattcctgc | aatatgtagt | ggtgatttcc | cttagcttcc | tctactacc | tcttatactc | 720 |
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| catgtgtttg | cagcaggact | acatcgaact | ctgatgtgcc | ggattgtggc | atgtctgcat | 900 |
| gtctcatcca | tctattgttt | ttggtaactc | agtttggaat | ttcagtgtct | gtcttccctg | 960 |
| ggttgacatt | ggaatcagcc | tctcctttga | gcttatttta | actcttgagc | aacataacat | 1020 |
| agatttcaat | tgaacagttt | ataccaagg | gcagcctgtg | cctgtttatg | gatcctctct | 1080 |
| gcctttgtac | ttgaagagcg | cattttacat | ttccagtcct | ttcacagaca | ggagctccaa | 1140 |
| ccttacgatg | gagaattaaa | cttgcttgta | tttccacttt | gtggatgagg | aactatgaga | 1200 |
| ggtggagtga | cttcctgggt | ccccgctgag | acttagtgac | agatcccaga | caagaacttc | 1260 |
| atctctgact | ccaggcttag | tctcttccc | cctgtctctt | gccaaactca | gccctgacac | 1320 |
| cgtgggcgtc | tcccctgaga | gcagatatat | ttcaattgtc | caggccaaaa | gaggggag | 1380 |
| gcggcataaa | cacccaaatt | aggtggagga | tccaaaagtc | attttcat | ggctgtggaa | 1440 |
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| acaggcgtac | accaccacac | ccagctaagt | ttttgtactt | ttagtggaga | cgggggttca | 1860 |
| ccatgttggtc | caggctgggtc | acggactcct | gacctcagat | gatctgcccg | cctgagcctc | 1920 |
| cgaagtgtct | gggattacag | gcgtgagcca | ctgcgcccg | catggagctg | ctattgatgg | 1980 |
| gtgagctcca | cagcttttgc | agaagcagag | gatatgaact | gagagcagtg | ctgtcacctc | 2040 |
| tcagcatgtc | cccaagccca | actggggcct | cctggagatg | cctcagtcgg | cactggcccc | 2100 |
| aagggaatcg | tggggaacag | ttgcacaatt | tgcaagtttc | tgagtgcagc | ttttcccatc | 2160 |
| cttgggatca | gcagataagt | tgtaaacaca | gggagggtact | gcttattgga | tatacttttc | 2220 |
| ataagtagga | cagaattctt | ttgggactct | agagttggga | actaccactt | actagcggcg | 2280 |
| tggctgaggc | agtcttcctc | ctctgtgggt | caggcccttc | atctgtgaaa | tggggtcaca | 2340 |
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| tgtgttact | gtttttaaag | atacgatatt | tcagataatt | caggagcacg | taaggatgaa | 2580 |
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| gtttttgcta | ctacaaataa | tgcattgatg | ataaataactt | ttacatacat | ggttgtatgt | 2880 |
| ttatctgaac | tattttcacc | aatatattca | cctagtgtgt | atggaagtgt | ccatttttgt | 2940 |

119

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<210> 166

<211> 67

<212> PRT

<213> Homo sapiens

<400> 166

Met Ile Asn Thr Phe Thr Tyr Met Val Val Cys Leu Ser Glu Leu Phe
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Ser Pro Ile Tyr Ser Pro Ser Val Tyr Gly Ser Val His Phe Cys His
 20 25 30

Thr Pro Gly Asn Pro Val Ile Leu Phe Leu Asn Ile Leu Leu Met Asp
 35 40 45

Leu Cys Ser Cys Leu Asn Val Phe Asn Phe Gln Gln Asn Glu Pro His
 50 55 60

Ser Leu Phe

65

<210> 167

<211> 2401

<212> DNA

<213> Homo sapiens

<400> 167

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120

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gcagtatata ctgatccaga tgataaacca gtgaactatg tcaaaagcac tctcaatatt 2280
acatttgaca aaaagttttg tacttttcac atagcttggt gccccgtaaa aggggtaaca 2340
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<210> 168

<211> 498

<212> PRT

<213> Homo sapiens

<400> 168

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Met Gln Glu Ser Gly Cys Arg Leu Glu His Pro Ser Ala Thr Lys Phe
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```

```

Arg Asn His Val Met Glu Gly Asp Trp Asp Lys Ala Glu Asn Asp Leu
      20              25              30

```

```

Asn Glu Leu Lys Pro Leu Val His Ser Pro His Ala Ile Val Arg Met
    35              40              45

```

```

Lys Phe Leu Leu Leu Gln Gln Lys Tyr Leu Glu Tyr Leu Glu Asp Gly
    50              55              60

```

```

Lys Val Leu Glu Ala Leu Gln Val Leu Arg Cys Glu Leu Thr Pro Leu
    65              70              75              80

```

```

Lys Tyr Asn Thr Glu Arg Ile His Val Leu Ser Gly Tyr Leu Met Cys
      85              90              95

```

```

Ser His Ala Glu Asp Leu Arg Ala Lys Ala Glu Trp Glu Gly Lys Gly
    100              105              110

```

```

Thr Ala Ser Arg Ser Lys Leu Leu Asp Lys Leu Gln Thr Tyr Leu Pro
    115              120              125

```

```

Pro Ser Val Met Leu Pro Pro Arg Arg Leu Gln Thr Leu Leu Arg Gln
    130              135              140

```

```

Ala Val Glu Leu Gln Arg Asp Arg Cys Leu Tyr His Asn Thr Lys Leu
    145              150              155              160

```

```

Asp Asn Asn Leu Asp Ser Val Ser Leu Leu Ile Asp His Val Cys Ser
    165              170              175

```

```

Arg Arg Gln Phe Pro Cys Tyr Thr Gln Gln Ile Leu Thr Glu His Cys
    180              185              190

```

```

Asn Glu Val Trp Phe Cys Lys Phe Ser Asn Asp Gly Thr Lys Leu Ala
    195              200              205

```

```

Thr Gly Ser Lys Asp Thr Thr Val Ile Ile Trp Gln Val Asp Pro Asp
    210              215              220

```

121

Thr His Leu Leu Lys Leu Leu Lys Thr Leu Glu Gly His Ala Tyr Gly
 225 230 235 240
 Val Ser Tyr Ile Ala Trp Ser Pro Asp Asp Asn Tyr Leu Val Ala Cys
 245 250 255
 Gly Pro Asp Asp Cys Ser Glu Leu Trp Leu Trp Asn Val Gln Thr Gly
 260 265 270
 Glu Leu Arg Thr Lys Met Ser Gln Ser His Glu Asp Ser Leu Thr Ser
 275 280 285
 Val Ala Trp Asn Pro Asp Gly Lys Arg Phe Val Thr Gly Gly Gln Arg
 290 295 300
 Gly Gln Phe Tyr Gln Cys Asp Leu Asp Gly Asn Leu Leu Asp Ser Trp
 305 310 315 320
 Glu Gly Val Arg Val Gln Cys Leu Trp Cys Leu Ser Asp Gly Lys Thr
 325 330 335
 Val Leu Ala Ser Asp Thr His Gln Arg Ile Arg Gly Tyr Asn Phe Glu
 340 345 350
 Asp Leu Thr Asp Arg Asn Ile Val Gln Glu Asp His Pro Ile Met Ser
 355 360 365
 Phe Thr Ile Ser Lys Asn Gly Arg Leu Ala Leu Leu Asn Val Ala Thr
 370 375 380
 Gln Gly Val His Leu Trp Asp Leu Gln Asp Arg Val Leu Val Arg Lys
 385 390 395 400
 Tyr Gln Gly Val Thr Gln Gly Phe Tyr Thr Ile His Ser Cys Phe Gly
 405 410 415
 Gly His Asn Glu Asp Phe Ile Ala Ser Gly Ser Glu Asp His Lys Val
 420 425 430
 Tyr Ile Trp His Lys Arg Ser Glu Leu Pro Ile Ala Glu Leu Thr Gly
 435 440 445
 His Thr Arg Thr Val Asn Cys Val Ser Trp Asn Pro Gln Ile Pro Ser
 450 455 460
 Met Met Ala Ser Ala Ser Asp Asp Gly Thr Val Arg Ile Trp Gly Pro
 465 470 475 480
 Ala Pro Phe Ile Asp His Gln Asn Ile Glu Glu Glu Cys Ser Ser Met
 485 490 495
 Asp Ser

<210> 169

<211> 1110

<212> DNA

<213> Homo sapiens

<400> 169

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122,

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ctcactgaca gaattaaaaa aaaaaaaaaa 1110

```

<210> 170

<211> 193

<212> PRT

<213> Homo sapiens

<400> 170

```

Met Ser Gly Lys His Tyr Lys Gly Pro Glu Val Ser Cys Cys Ile Lys
  1                      5                      10                      15

```

```

Tyr Phe Ile Phe Gly Phe Asn Val Ile Phe Trp Phe Leu Gly Ile Thr
      20                      25                      30

```

```

Phe Leu Gly Ile Gly Leu Trp Ala Trp Asn Glu Lys Gly Val Leu Ser
  35                      40                      45

```

```

Asn Ile Ser Ser Ile Thr Asp Leu Gly Gly Phe Asp Pro Val Trp Leu
  50                      55                      60

```

```

Phe Leu Val Val Gly Gly Val Met Phe Ile Leu Gly Phe Ala Gly Cys
  65                      70                      75                      80

```

```

Ile Gly Ala Leu Arg Glu Asn Thr Phe Leu Leu Lys Phe Phe Ser Val
      85                      90                      95

```

```

Phe Leu Gly Ile Ile Phe Phe Leu Glu Leu Thr Ala Gly Val Leu Ala
  100                      105                      110

```

```

Phe Val Phe Lys Asp Trp Ile Lys Asp Gln Leu Tyr Phe Phe Ile Asn
  115                      120                      125

```

```

Asn Asn Ile Arg Ala Tyr Arg Asp Asp Ile Asp Leu Gln Asn Leu Ile
  130                      135                      140

```

```

Asp Phe Thr Gln Glu Tyr Ile Pro Met Gln Val Glu Ser Asp Val Ala
  145                      150                      155                      160

```

```

Phe His Ser Pro Ala Ala Leu Lys Ile Pro Gln Lys Met Ser Ser Thr
      165                      170                      175

```

```

Leu Ser Val Ala Met Met Pro Gly Lys Asn Gln Lys Leu Thr Ser Arg
  180                      185                      190

```

Leu

123

<210> 171
 <211> 1621
 <212> DNA
 <213> Homo sapiens

<400> 171
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 aaggtctgct aggcagcttc acagcctttt ctttcctctt ctctatcaga ggtctctttg 180
 gaagcaataa tgatgactat aacaagaact tatcttgctt tgcaagattc ttccgccgtc 240
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 agagagagga tgtctctctc agactggcac ctggcggtga agctggctga ccagccactt 360
 actccaaagt ctattcttct gttgccagag acagaactgg gagaatactc gctagggggc 420
 tatagtattt catttctgaa gcagcttatt gctggcaaac tccaggagtc tgttccagac 480
 cctgagctga ttgatctgat ctactgtggt cggaagctaa aagatgacca gacacttgac 540
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 gatcagaaac cggaacctgt ggacaaagtg gctgccatga gagagtcccg ggtgttgac 660
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 ttgggaggca ctcatgaagg tgcctccatc tctcccttcc ccaatatacc tgatgggtcaa 1560
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 a 1621

<210> 172
 <211> 420
 <212> PRT
 <213> Homo sapiens

<400> 172
 Met Met Thr Ile Thr Arg Thr Tyr Leu Ala Leu Gln Asp Ser Ser Ala
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 Val Arg Val Ser Asp Leu Phe Ser Gly Val Pro Cys Met Pro Gly Arg
 20 25 30
 Lys Arg Glu Arg Glu Arg Glu Arg Met Ser Leu Ser Asp Trp His Leu
 35 40 45
 Ala Val Lys Leu Ala Asp Gln Pro Leu Thr Pro Lys Ser Ile Leu Arg
 50 55 60
 Leu Pro Glu Thr Glu Leu Gly Glu Tyr Ser Leu Gly Gly Tyr Ser Ile
 65 70 75 80
 Ser Phe Leu Lys Gln Leu Ile Ala Gly Lys Leu Gln Glu Ser Val Pro
 85 90 95

124

Asp Pro Glu Leu Ile Asp Leu Ile Tyr Cys Gly Arg Lys Leu Lys Asp
 100 105 110
 Asp Gln Thr Leu Asp Phe Tyr Gly Ile Gln Pro Gly Ser Thr Val His
 115 120 125
 Val Leu Arg Lys Ser Trp Pro Glu Pro Asp Gln Lys Pro Glu Pro Val
 130 135 140
 Asp Lys Val Ala Ala Met Arg Glu Phe Arg Val Leu His Thr Ala Leu
 145 150 155 160
 His Ser Ser Ser Ser Tyr Arg Glu Ala Val Phe Lys Met Leu Ser Asn
 165 170 175
 Lys Glu Ser Leu Asp Gln Ile Ile Val Ala Thr Pro Gly Leu Ser Ser
 180 185 190
 Asp Pro Ile Ala Leu Gly Val Leu Gln Asp Lys Asp Leu Phe Ser Val
 195 200 205
 Phe Ala Asp Pro Asn Met Leu Asp Thr Leu Val Pro Ala His Pro Ala
 210 215 220
 Leu Val Asn Ala Ile Val Leu Val Leu His Ser Val Ala Gly Ser Ala
 225 230 235 240
 Pro Met Pro Gly Thr Asp Ser Ser Ser Arg Ser Met Pro Ser Ser Ser
 245 250 255
 Tyr Arg Asp Met Pro Gly Gly Phe Leu Phe Glu Gly Leu Ser Asp Asp
 260 265 270
 Glu Asp Asp Phe His Pro Asn Thr Arg Ser Thr Pro Ser Ser Ser Thr
 275 280 285
 Pro Ser Ser Arg Pro Ala Ser Leu Gly Tyr Ser Gly Ala Ala Gly Pro
 290 295 300
 Arg Pro Ile Thr Gln Ser Glu Leu Ala Thr Ala Leu Ala Leu Ala Ser
 305 310 315 320
 Thr Pro Glu Ser Ser Ser His Thr Pro Thr Pro Gly Thr Gln Gly His
 325 330 335
 Ser Ser Gly Thr Ser Pro Met Ser Ser Gly Val Gln Ser Gly Thr Pro
 340 345 350
 Ile Thr Asn Asp Leu Phe Ser Gln Ala Leu Gln His Ala Leu Gln Ala
 355 360 365
 Ser Gly Gln Pro Ser Leu Gln Ser Gln Trp Gln Pro Gln Leu Gln Gln
 370 375 380
 Leu Arg Asp Met Gly Ile Gln Asp Asp Glu Leu Ser Leu Arg Ala Leu
 385 390 395 400
 Gln Ala Thr Gly Gly Asp Ile Gln Ala Ala Leu Glu Leu Ile Phe Ala
 405 410 415
 Gly Gly Ala Pro
 420

125

<210> 173
 <211> 1534
 <212> DNA
 <213> Homo sapiens

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 cctcaaggcc ccctttggac gcaaagatct ttccaggcca ggtgtattcc gaacttaagt 240
 accacccaga gatgagattc ttccactggt tcagcaagtg gaggaagctg catcgtgacc 300
 aggagtatga gggtcacctgg tacatatcct ggagcccctg cacaagtgt acaagggata 360
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 actacttctg ggaccagat taccaggagg cgcttcgcag cctgtgtcag aaaagagacg 480
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 tcgtgtacag ccaaagagag ctatttgagc cttggaataa tctgcctaaa tattatata 600
 tactgcacat catgctgggg gagattctca gacactgat ggatccacc acattcactt 660
 tcaactttta caatgaacct tgggtcagag gacggcatga gacttacctg tgttatgagg 720
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 1534

<210> 174
 <211> 384
 <212> PRT
 <213> Homo sapiens

<400> 174
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 Phe Ser Tyr Asn Phe Tyr Asn Arg Pro Ile Leu Ser Arg Arg Asn Thr
 20 25 30
 Val Trp Leu Cys Tyr Glu Val Lys Thr Lys Gly Pro Ser Arg Pro Pro
 35 40 45
 Leu Asp Ala Lys Ile Phe Arg Gly Gln Val Tyr Ser Glu Leu Lys Tyr
 50 55 60
 His Pro Glu Met Arg Phe Phe His Trp Phe Ser Lys Trp Arg Lys Leu
 65 70 75 80
 His Arg Asp Gln Glu Tyr Glu Val Thr Trp Tyr Ile Ser Trp Ser Pro
 85 90 95
 Cys Thr Lys Cys Thr Arg Asp Met Ala Thr Phe Leu Ala Glu Asp Pro
 100 105 110

126

Lys Val Thr Leu Thr Ile Phe Val Ala Arg Leu Tyr Tyr Phe Trp Asp
 115 120 125
 Pro Asp Tyr Gln Glu Ala Leu Arg Ser Leu Cys Gln Lys Arg Asp Gly
 130 135 140
 Pro Arg Ala Thr Met Lys Ile Met Asn Tyr Asp Glu Phe Gln His Cys
 145 150 155 160
 Trp Ser Lys Phe Val Tyr Ser Gln Arg Glu Leu Phe Glu Pro Trp Asn
 165 170 175
 Asn Leu Pro Lys Tyr Tyr Ile Leu Leu His Ile Met Leu Gly Glu Ile
 180 185 190
 Leu Arg His Ser Met Asp Pro Pro Thr Phe Thr Phe Asn Phe Asn Asn
 195 200 205
 Glu Pro Trp Val Arg Gly Arg His Glu Thr Tyr Leu Cys Tyr Glu Val
 210 215 220
 Glu Arg Met His Asn Asp Thr Trp Val Leu Leu Asn Gln Arg Arg Gly
 225 230 235 240
 Phe Leu Cys Asn Gln Ala Pro His Lys His Gly Phe Leu Glu Gly Arg
 245 250 255
 His Ala Glu Leu Cys Phe Leu Asp Val Ile Pro Phe Trp Lys Leu Asp
 260 265 270
 Leu Asp Gln Asp Tyr Arg Val Thr Cys Phe Thr Ser Trp Ser Pro Cys
 275 280 285
 Phe Ser Cys Ala Gln Glu Met Ala Lys Phe Ile Ser Lys Asn Lys His
 290 295 300
 Val Ser Leu Cys Ile Phe Thr Ala Arg Ile Tyr Asp Asp Gln Gly Arg
 305 310 315 320
 Cys Gln Glu Gly Leu Arg Thr Leu Ala Glu Ala Gly Ala Lys Ile Ser
 325 330 335
 Ile Met Thr Tyr Ser Glu Phe Lys His Cys Trp Asp Thr Phe Val Asp
 340 345 350
 His Gln Gly Cys Pro Phe Gln Pro Trp Asp Gly Leu Asp Glu His Ser
 355 360 365
 Gln Asp Leu Ser Gly Arg Leu Arg Ala Ile Leu Gln Asn Gln Glu Asn
 370 375 380

<210> 175

<211> 3005

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (1407)

<400> 175

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gtggataaac aaaaagataa gaatggcgag agaataatca caataagggg tggcacagaa 180
tcaacaagat atgcagttca actaatcaat gcactcattc aagatcctgc taaggaactg 240
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cttaataaga atgttccaac aaatgtacgt tcttctttcc cagtttctct acccttagct 480
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ttcccagtgga gacctgtgaa tcttggaac acaaatagct ctccaaagca taataacaca 660
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gtattaatgt gaaatattta ccagaatatt caataaaaag atgaacagtc aaaaaaaa 3000
aaaaa 3005

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<210> 176

<211> 832

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (12)

<220>

128.

<221> UNSURE

<222> (449)

<400> 176

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Ala His Ile Asp Val Asp Lys Gln Lys Asp Lys Asn Gly Glu Arg Met
 20 25 30

Ile Thr Ile Arg Gly Gly Thr Glu Ser Thr Arg Tyr Ala Val Gln Leu
 35 40 45

Ile Asn Ala Leu Ile Gln Asp Pro Ala Lys Glu Leu Glu Asp Leu Ile
 50 55 60

Pro Lys Asn His Ile Arg Thr Pro Ala Ser Thr Lys Ser Ile His Ala
 65 70 75 80

Asn Phe Ser Ser Gly Val Gly Thr Thr Ala Ala Ser Ser Lys Asn Ala
 85 90 95

Phe Pro Leu Gly Ala Pro Thr Leu Val Thr Ser Gln Ala Thr Thr Leu
 100 105 110

Ser Thr Phe Gln Pro Ala Asn Lys Leu Asn Lys Asn Val Pro Thr Asn
 115 120 125

Val Arg Ser Ser Phe Pro Val Ser Leu Pro Leu Ala Tyr Pro His Pro
 130 135 140

His Phe Ala Leu Leu Ala Ala Gln Thr Met Gln Gln Ile Arg His Pro
 145 150 155 160

Arg Leu Pro Met Ala Gln Phe Gly Gly Thr Phe Ser Pro Ser Pro Asn
 165 170 175

Thr Trp Gly Pro Phe Pro Val Arg Pro Val Asn Pro Gly Asn Thr Asn
 180 185 190

Ser Ser Pro Lys His Asn Asn Thr Ser Arg Leu Pro Asn Gln Asn Gly
 195 200 205

Thr Val Leu Pro Ser Glu Ser Ala Gly Leu Ala Thr Ala Ser Cys Pro
 210 215 220

Ile Thr Val Ser Ser Val Val Ala Ala Ser Gln Gln Leu Cys Val Thr
 225 230 235 240

Asn Thr Arg Thr Pro Ser Ser Val Arg Lys Gln Leu Phe Ala Cys Val
 245 250 255

Pro Lys Thr Ser Pro Pro Ala Thr Val Ile Ser Ser Val Thr Ser Thr
 260 265 270

Cys Ser Ser Leu Pro Ser Val Ser Ser Ala Pro Ile Thr Ser Gly Gln
 275 280 285

Ala Pro Thr Thr Phe Leu Pro Ala Ser Thr Ser Gln Ala Gln Leu Ser
 290 295 300

Ser Gln Lys Met Glu Ser Phe Ser Ala Val Pro Pro Thr Lys Glu Lys
 305 310 315 320
 Val Ser Thr Gln Asp Gln Pro Met Ala Asn Leu Cys Thr Pro Ser Ser
 325 330 335
 Thr Ala Asn Ser Cys Ser Ser Ser Ala Ser Asn Thr Pro Gly Ala Pro
 340 345 350
 Glu Thr His Pro Ser Ser Ser Pro Thr Pro Thr Ser Ser Asn Thr Gln
 355 360 365
 Glu Glu Ala Gln Pro Ser Ser Val Ser Asp Leu Ser Pro Met Ser Met
 370 375 380
 Pro Phe Ala Ser Asn Ser Glu Pro Ala Pro Leu Thr Leu Thr Ser Pro
 385 390 395 400
 Arg Met Val Ala Ala Asp Asn Gln Asp Thr Ser Asn Leu Pro Gln Leu
 405 410 415
 Ala Val Pro Ala Pro Arg Val Ser His Arg Met Gln Pro Arg Gly Ser
 420 425 430
 Phe Tyr Ser Met Val Pro Asn Ala Thr Ile His Gln Asp Pro Gln Ser
 435 440 445
 Xaa Phe Val Thr Asn Pro Val Thr Leu Thr Pro Pro Gln Gly Pro Pro
 450 455 460
 Ala Ala Val Gln Leu Ser Ser Ala Val Asn Ile Met Asn Gly Ser Gln
 465 470 475 480
 Met His Ile Asn Pro Ala Asn Lys Ser Leu Pro Pro Thr Phe Gly Pro
 485 490 495
 Ala Thr Leu Phe Asn His Phe Ser Ser Leu Phe Asp Ser Ser Gln Val
 500 505 510
 Pro Ala Asn Gln Gly Trp Gly Asp Gly Pro Leu Ser Ser Arg Val Ala
 515 520 525
 Thr Asp Ala Ser Phe Thr Val Gln Ser Ala Phe Leu Gly Asn Ser Val
 530 535 540
 Leu Gly His Leu Glu Asn Met His Pro Asp Asn Ser Lys Ala Pro Gly
 545 550 555 560
 Phe Arg Pro Pro Ser Gln Arg Val Ser Thr Ser Pro Val Gly Leu Pro
 565 570 575
 Ser Ile Asp Pro Ser Gly Ser Ser Pro Ser Ser Ser Ser Ala Pro Leu
 580 585 590
 Ala Ser Phe Ser Gly Ile Pro Gly Thr Arg Val Phe Leu Gln Gly Pro
 595 600 605
 Ala Pro Val Gly Thr Pro Ser Phe Asn Arg Gln His Phe Ser Pro His
 610 615 620
 Pro Trp Thr Ser Ala Ser Asn Ser Ser Thr Ser Ala Pro Pro Thr Leu
 625 630 635 640

130

Gly Gln Pro Lys Gly Val Ser Ala Ser Gln Asp Arg Lys Ile Pro Pro
 645 650 655
 Pro Ile Gly Thr Glu Arg Leu Ala Arg Ile Arg Gln Gly Gly Ser Val
 660 665 670
 Ala Gln Ala Pro Ala Gly Thr Ser Phe Val Ala Pro Val Gly His Ser
 675 680 685
 Gly Ile Trp Ser Phe Gly Val Asn Ala Val Ser Glu Gly Leu Ser Gly
 690 695 700
 Trp Ser Gln Ser Val Met Gly Asn His Pro Met His Gln Gln Leu Ser
 705 710 715 720
 Asp Pro Ser Thr Phe Ser Gln His Gln Pro Met Glu Arg Asp Asp Ser
 725 730 735
 Gly Met Val Ala Pro Ser Asn Ile Phe His Gln Pro Met Ala Ser Gly
 740 745 750
 Phe Val Asp Phe Ser Lys Gly Leu Pro Ile Ser Met Tyr Gly Gly Thr
 755 760 765
 Ile Ile Pro Ser His Pro Gln Leu Ala Asp Val Pro Gly Gly Pro Leu
 770 775 780
 Phe Asn Gly Leu His Asn Pro Asp Pro Ala Trp Asn Pro Met Ile Lys
 785 790 795 800
 Val Ile Gln Asn Ser Thr Glu Cys Thr Asp Ala Gln Gln Ile Trp Pro
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 Gly Thr Trp Ala Pro His Ile Gly Asn Met His Leu Lys Tyr Val Asn
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<210> 177

<211> 1561

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (1150)

<400> 177

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 ggacaatata aggcttcaag attgctcagc actatgtgaa gaggaagaag atgaagatga 840

131

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aggagaagct gcagatatgg aagaatatga agagagtgga ttgttggaaa cagatgaggc 900
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a                                                                                   1561

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<210> 178

<211> 314

<212> PRT

<213> Homo sapiens

<400> 178

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```

Glu Tyr Leu Thr Pro Val Leu Lys Glu Ser Lys Phe Lys Glu Thr Gly
      20             25             30

```

```

Val Ile Thr Pro Glu Glu Phe Val Ala Ala Gly Asp His Leu Val His
    35             40             45

```

```

His Cys Pro Thr Trp Gln Trp Ala Thr Gly Glu Glu Leu Lys Val Lys
    50             55             60

```

```

Ala Tyr Leu Pro Thr Gly Lys Gln Phe Leu Val Thr Lys Asn Val Pro
    65             70             75             80

```

```

Cys Tyr Lys Arg Cys Lys Gln Met Glu Tyr Ser Asp Glu Leu Glu Ala
      85             90             95

```

```

Ile Ser Glu Glu Asp Asp Gly Asp Gly Gly Trp Val Asp Thr Tyr His
    100            105            110

```

```

Asn Thr Gly Ile Thr Gly Ile Thr Glu Ala Val Lys Glu Ile Thr Leu
    115            120            125

```

```

Glu Asn Lys Asp Asn Ile Arg Leu Gln Asp Cys Ser Ala Leu Cys Glu
    130            135            140

```

```

Glu Glu Glu Asp Glu Asp Glu Gly Glu Ala Ala Asp Met Glu Glu Tyr
    145            150            155            160

```

```

Glu Glu Ser Gly Leu Leu Glu Thr Asp Glu Ala Thr Leu Asp Thr Arg
    165            170            175

```

```

Lys Ile Val Glu Ala Cys Lys Ala Lys Thr Asp Ala Gly Glu Asp
    180            185            190

```

```

Ala Ile Leu Gln Thr Arg Thr Tyr Asp Leu Tyr Ile Thr Tyr Asp Lys
    195            200            205

```

```

Tyr Tyr Gln Thr Pro Arg Leu Trp Leu Phe Gly Tyr Asp Glu Gln Arg
    210            215            220

```

132

Gln Pro Leu Thr Val Glu His Met Tyr Glu Asp Ile Ser Gln Asp His
 225 230 235 240

Val Lys Lys Thr Val Thr Ile Glu Asn His Pro His Leu Pro Pro Pro
 245 250 255

Pro Met Cys Ser Val His Pro Cys Arg His Ala Glu Val Met Lys Lys
 260 265 270

Ile Ile Glu Thr Val Ala Glu Gly Gly Gly Glu Leu Gly Val His Met
 275 280 285

Tyr Leu Leu Ile Phe Leu Lys Phe Val Gln Ala Val Ile Pro Thr Ile
 290 295 300

Glu Tyr Asp Tyr Thr Arg His Phe Thr Met
 305 310

<210> 179

<211> 2379

<212> DNA

<213> Homo sapiens

<400> 179

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133

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<210> 180

<211> 67

<212> PRT

<213> Homo sapiens

<400> 180

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Ala Ile Thr Cys His Ser Ile Leu Cys Ser Pro Arg Arg Met Val Ser
 20 25 30

Ala Phe Ser Cys Arg Cys Met Pro Ser Glu Pro Arg Asn Thr Lys Tyr
 35 40 45

Ile Gly Leu Lys Arg Glu Thr Gln Gly Cys Gln Phe Ser Val Gly Leu
 50 55 60

Pro Leu Pro
 65

<210> 181

<211> 1607

<212> DNA

<213> Homo sapiens

<400> 181

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 aatacattag cattttgtat tttgatggaa attgttacag aatttaaaga tttgatgaaa 240
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 cttttcaagt aacagcagca cttgtgaaag gaaaaaaaaa tgcacatggt tcttagtagg 420
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<210> 182

<211> 58

134

<212> PRT

<213> Homo sapiens

<400> 182

Met Tyr Leu Phe Ser Ala Leu Lys Cys Phe Gln Lys Ile Lys Leu Leu
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Leu Phe Val Cys Phe Phe Asn Arg Asn Val Asp Gly Glu Ile Gly Gly
 20 25 30

Asn Leu Ser Ile Gly Thr Ala Thr Leu Ser Ser Leu Gly Leu Lys Glu
 35 40 45

Lys Val Asn Leu Met Pro Arg Gly Glu Gln
 50 55

<210> 183

<211> 2695

<212> DNA

<213> Homo sapiens

<400> 183

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 caaaacactg aaagagaata tgtctttatt tgcattgtgg caaatgaaaa ttccgggtttc 840
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135

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<210> 184

<211> 256

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (64)

<400> 184

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Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Val Leu Val Asn Ser
  20             25             30

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```

Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu
  35             40             45

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```

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Ile Leu Xaa
  50             55             60

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```

His Trp Tyr Ala Thr Val Leu Asn Pro Gly Ser Tyr Ser Leu Gly Val
  65             70             75             80

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```

Arg Ile Thr Thr Ile Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile
  85             90             95

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Trp Val Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn
 100             105             110

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Phe Ser Asn Phe Ile Phe Leu His Leu Lys Arg Arg Ile Lys Ser Val
 115             120             125

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```

Ile Pro Val Ile Leu Leu Gly Ser Leu Leu Phe Leu Val Cys His Leu
 130             135             140

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Val Val Val Asn Met Asp Glu Ser Met Trp Thr Lys Glu Tyr Glu Gly
 145             150             155             160

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Asn Val Ser Trp Glu Ile Lys Leu Ser Asp Pro Thr His Leu Ser Asp
 165             170             175

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Met Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu
 180             185             190

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Leu Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys
 195             200             205

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Met Gln Phe His Gly Lys Gly Ser Pro Asp Ser Asn Thr Lys Val His
 210             215             220

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Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Phe Ala Val
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136.

Tyr Phe Leu Ser Leu Ile Thr Ser Ile Trp Asn Phe Arg Arg Arg Leu
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<210> 185
 <211> 1111
 <212> DNA
 <213> Homo sapiens

<400> 185
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 1111

<210> 186
 <211> 290
 <212> PRT
 <213> Homo sapiens

<400> 186
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 20 25 30
 Ile Leu Trp Phe Gln Leu Ala Leu Cys Phe Gly Pro Ala Gln Leu Thr
 35 40 45
 Gly Gly Phe Asp Asp Leu Gln Val Cys Ala Asp Pro Gly Ile Pro Glu
 50 55 60
 Asn Gly Phe Arg Thr Pro Ser Gly Gly Val Phe Phe Glu Gly Ser Val
 65 70 75 80
 Ala Arg Phe His Cys Gln Asp Gly Phe Lys Leu Lys Gly Ala Thr Lys
 85 90 95
 Arg Leu Cys Leu Lys His Phe Asn Gly Thr Leu Gly Trp Ile Pro Ser
 100 105 110
 Asp Asn Ser Ile Cys Val Gln Glu Asp Cys Arg Ile Pro Gln Ile Glu
 115 120 125
 Asp Ala Glu Ile His Asn Lys Thr Tyr Arg His Gly Glu Lys Leu Ile
 130 135 140

137

Ile Thr Cys His Glu Gly Phe Lys Ile Arg Tyr Pro Asp Leu His Asn
 145 150 155 160

Met Val Ser Leu Cys Arg Asp Asp Gly Thr Trp Asn Asn Leu Pro Ile
 165 170 175

Cys Gln Gly Cys Leu Arg Pro Leu Ala Ser Ser Asn Gly Tyr Val Asn
 180 185 190

Ile Ser Glu Leu Gln Thr Ser Phe Pro Val Gly Thr Val Ile Ser Tyr
 195 200 205

Arg Cys Phe Pro Gly Phe Lys Leu Asp Gly Ser Ala Tyr Leu Glu Cys
 210 215 220

Leu Gln Asn Leu Ile Trp Ser Ser Ser Pro Pro Arg Cys Leu Ala Leu
 225 230 235 240

Glu Gly Gly Arg Pro Glu His Leu Phe Pro Val Leu Tyr Phe Pro His
 245 250 255

Ile Arg Leu Ala Ala Ala Val Leu Tyr Phe Cys Pro Val Leu Lys Ser
 260 265 270

Ser Pro Thr Pro Ala Pro Thr Cys Ser Ser Thr Ser Thr Thr Thr Ser
 275 280 285

Leu Phe
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<210> 187
 <211> 29
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<220>
 <223> oligonucleotide

<220>
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<400> 187
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29

<210> 188
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<220>
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<400> 188

tncagaaaga ctgcagggat tcgggacaa

29

<210> 189

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

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<222> (2)

<223> biotinylated phosphoramidite residue

<400> 189

antcatcact acacgtcttc tcccctaca

29

<210> 190

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

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<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 190

gnctgagtat gttgtggaat gggctgcaa

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<210> 191

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 191

tngtgactgt atacctgcaa cctcaatgc

29

<210> 192

<211> 29

<212> DNA

<213> Artificial Sequence

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<223> oligonucleotide

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<400> 192
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<400> 193
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<210> 194
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<220>
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<400> 194
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<210> 195
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 195
gcatatactc tgttgcccgc 20

<210> 196
<211> 18
<212> DNA
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<220>
<223> oligonucleotide

<400> 196
ctgccactat ccccaggg 18

<210> 197
<211> 29
<212> DNA
<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 197

antggtgtgc cactcccaac aatctttcc

29

<210> 198

<211> 2505

<212> DNA

<213> Homo sapiens

<400> 198

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| cttgagggcg | tagggccgag | accgtcgcgg | gtactgaggc | gcctccgtcg | tctctccac | 180 |
| tcgccgccc | ctttccaaga | catatgtccc | gcttgagcc | catttcgatg | ctgcgaaacg | 240 |
| gtgagctgcg | gggtgtttgg | ggaagagctc | agagactggg | aaatgggaat | ctgctgggag | 300 |
| cctagggccg | caatccggaa | agggagctgt | ggcctgggtg | ttggccccta | gtccaccagg | 360 |
| acagtgccgg | aggggaatgg | ctggatatgg | gggcgggggt | ggtgagatgc | aacgcgatat | 420 |
| gtcagcagaa | ccccaaagaga | ggtaataggg | gtgggaaacc | tctgacaacc | aggcctccga | 480 |
| attagaaaag | agttttgtgt | tctggggact | agtccgtcca | ccaagcgctc | agtggcggca | 540 |
| gtttcccgtc | tttctgcctg | tggctgtgtc | ttactgacca | tggctctgtg | tctagtgggt | 600 |
| ccaagcctct | ccgggtggc | cagtctttct | gtaggttgcg | gcacaacgcc | aggcaaaaga | 660 |
| agaggaagga | atttaatcct | aatcgggtga | ggtcgatttg | agggctctgt | gtagcagggtg | 720 |
| gctccgcttg | aagcagggga | ggaagtttcc | tccgatcagt | agagattgga | aagattgttg | 780 |
| ggagtggcac | accactaggg | aaaagaagaa | ggggcgaaact | gcttgtcttg | aggaggtcaa | 840 |
| ccccagaat | cagctcttgt | ggccttgaag | tggctgaaga | cgatcacccct | ccacaggctt | 900 |
| gagcccagtc | ccacagcctt | cctccccag | cctgagtgac | tactctattc | cttggctccct | 960 |
| gctattgtcg | gggacgattg | catgggctac | gccaggaag | taggctgggt | gaccgcaggc | 1020 |
| ctggtgattg | gggctggcgc | ctgctattgc | atttatagac | tgactagggg | aagaaaacag | 1080 |
| aacaaggaaa | aaatggctga | gggtggatct | ggggatgtgg | atgatgctgg | ggactgttct | 1140 |
| ggggccaggt | ataatgactg | gtctgatgat | gatgatgaca | gcaatgagag | caagagtata | 1200 |
| gtatggtacc | caccttgggc | tcggattggg | actgaagctg | gaaccagagc | tagggccagg | 1260 |
| gcaagggcca | gggctacccg | ggcacgtcgg | gctgtccaga | aacgggcttc | ccccaatcca | 1320 |
| gatgataccg | ttttgtcccc | tcaagagcta | caaaaggctc | tttgcttggt | tgagatgtct | 1380 |
| gaaaagcctt | atattcttga | agcagcttta | attgctctgg | gtaacaatgc | tgcttatgca | 1440 |
| tttaacagag | atattattcg | tgatctgggt | ggctctccaa | ttgtcgcaaa | gattctcaat | 1500 |
| actcgggata | ccatagttaa | ggaaaaggct | ttaattgtcc | tgaataactt | gagtgtgaat | 1560 |
| gctgaaaatc | agcgcaggct | taaagtatac | atgaatcaag | tgtgtgatga | cacaatcact | 1620 |
| tctcgcttga | actcatctgt | gcagcttgct | ggactgagat | tgcttacaaa | tatgactgtt | 1680 |
| actaatgagt | atcagcacat | gcttgctaat | tccatttctg | actttttctg | tttattttca | 1740 |
| gcgggaaatg | aagaaaccaa | acttcagggt | ctgaaactcc | ttttgaattt | ggctgaaaat | 1800 |
| ccagccatga | ctagggaaact | gctcagggcc | caagtaccat | cttccactggg | ctccctcttt | 1860 |
| aataagaagg | agaacaaaga | agttattctt | aaacttctgg | tcatatttga | gaacataaat | 1920 |
| gataatttca | aatgggaaga | aaatgaacct | actcagaatc | aattcgggtga | aggttcactt | 1980 |
| tttttctttt | taaaagaatt | tcaagtgtgt | gctgataagg | ttctgggaat | agaaagtcac | 2040 |
| catgattttt | tgggtgaaagt | aaaagtggga | aaattcatgg | ccaaacttgc | tgaacatatg | 2100 |
| ttcccaaaga | gccaggaata | acaccttgat | tttgtaattt | agaagcaaca | cacattgtaa | 2160 |
| actattcatt | ttctccacct | tgtttatatg | gtaaaaggaa | cctttcagct | gccagttttg | 2220 |
| aataatgaat | atcatattgt | atcatcaatg | ctgatattta | actgagttgg | tctttaggtt | 2280 |
| taagatggat | aatgaatat | cactacttgt | tctgaaaaca | tgtttggtgc | tttttatctc | 2340 |
| gctgcctaga | ttgaaatatt | ttgctatttc | ttctgcataa | gtgacagtga | accaattcat | 2400 |
| catgagtaag | ctcccttctg | tcattttcat | tgattttaatt | tgtgtatcat | caataaaaatt | 2460 |
| gtatgttaat | gctggaaaga | aaaaaaaaa | aaaaaaaaa | aaaaa | | 2505 |

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 Pro Ser Leu Asp Val Cys Thr Asn Tyr Ser Leu Glu Leu Phe Ser Leu
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 35 40 45
 Ser Phe Ala
 50

160

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 20 25 30
 Leu Phe Ser Asp Trp Arg Ser Pro Trp Pro Ala Ser Phe His Thr Xaa
 35 40 45
 Leu Leu Ala Gly Thr Gly Leu Ala Pro Thr Phe Pro Ala Ser Ser Val
 50 55 60
 Val Ala Ser Leu Pro Glu Pro Gly Ser Ser Ser Gly Pro Thr Ser Lys
 65 70 75 80
 Cys His

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 20 25 30
 Ile Ser Pro Ala Gln Ser His Arg Asn Ile Lys Ile Leu Glu Asp Glu
 35 40 45
 Pro His Ser Lys Asp Glu Thr Pro Leu Cys Thr Leu Leu Asp Trp Gln
 50 55 60
 Asp Ser Leu Ala Lys Arg Cys Val Cys Val Ser Asn Thr Ile Arg Ser
 65 70 75 80
 Leu Ser Phe Val Pro Gly Asn Asp Phe Glu Met Ser Lys His Pro Gly
 85 90 95
 Leu Leu Leu Ile Leu Gly Lys Leu Ile Leu Leu His His Lys His Pro
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 Gln Gly
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 35 40 45
 Thr His Leu Lys Ile Thr Met Ser Ser Gly Arg Cys Ala Ile Val Leu
 50 55 60
 Gly Leu Gly Gly Cys Gly Arg Pro Thr Leu Gly Met Gln Ser Ser Asp
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 35 40 45
 Lys Leu Ser Ser Val Ala Thr Thr Leu Arg Gln Gln Gln Leu Val Leu
 50 55 60
 Glu Ile Ser Leu Met Ser Val Pro Pro Gly Cys Gly Pro Leu Leu Pro
 65 70 75 80
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162.

<400> 279

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Ile Cys Gly Gly Lys Thr Leu Pro Arg Thr Leu Leu Asp Ile Leu Ala
 20 25 30

Asp Gly Thr Ile Leu Lys Val Gly Val Gly Cys Ser Glu Asp Ala Ser
 35 40 45

Lys Leu Leu Gln Asp Tyr Gly Leu Val Val Arg Gly Cys Leu Asp Leu
 50 55 60

Arg Tyr Leu Ala Met Arg Gln Arg Asn Asn Leu Leu Cys Asn Gly Leu
 65 70 75 80

Ser Leu Lys Ser Leu Ala Glu Thr Val Leu Asn Phe Pro Leu Asp Lys
 85 90 95

Ser Leu Leu Leu Arg Cys Ser Asn Trp Asp Ala Glu Thr Leu Thr Glu
 100 105 110

Asp Gln Val Ile Tyr Ala Ala Arg Asp Ala Gln Ile Ser Val Ala Leu
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Lys Lys Arg
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<211> 176

<212> PRT

<213> Homo sapiens

<400> 280

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Val His Pro Lys Val Arg Phe His Phe Ser Val Lys Val Asn Gly Ile
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Leu Ser Thr Glu Ile Phe Gly Val Glu Asn Glu Pro Thr Leu Asn Leu
 35 40 45

Gly Asn Gly Ile Ala Leu Leu Val Asp Ser Gln His Tyr Val Ser Arg
 50 55 60

Pro Asn Phe Gly Thr Ile Glu Ser His Cys Ser Arg Ile His Pro Val
 65 70 75 80

Leu Gly His Pro Val Met Leu Phe Ile Pro Glu Asp Val Ala Gly Met
 85 90 95

Asp Leu Leu Gly Glu Leu Ile Leu Thr Pro Ala Ala Ala Leu Cys Pro
 100 105 110

Ser Pro Lys Val Ser Ser Asn Gln Leu Asn Arg Ile Ser Ser Val Ser
 115 120 125

163

Ile Phe Leu Tyr Gly Pro Leu Gly Leu Pro Leu Ile Leu Ser Thr Trp
 130 135 140

Glu Gln Pro Met Thr Thr Phe Phe Lys Asp Thr Ser Ser Leu Val Asp
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Trp Lys Ile Pro Phe Val Tyr Asp Thr Gln Phe Gly Ser Gln Phe Gly
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<210> 281

<211> 89

<212> PRT

<213> Homo sapiens

<400> 281

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Lys Glu Leu Asn Ser Asn Asn Ile Gly Asp Asn Ile Phe Phe Ser Ser
 20 25 30

Leu Ser Leu Leu Tyr Ala Leu Ser Met Val Leu Leu Gly Ala Arg Gly
 35 40 45

Glu Thr Ala Glu Gln Leu Glu Lys Val Leu His Phe Ser His Thr Val
 50 55 60

Asp Ser Leu Lys Pro Gly Phe Lys Asp Ser Pro Lys Cys Ser Gln Ala
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Gly Arg Ile His Ser Glu Phe Gly Val
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<210> 282

<211> 115

<212> PRT

<213> Homo sapiens

<400> 282

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 20 25 30

Pro Leu Tyr Leu Thr Ser Arg Pro Gly Asp Trp Ser Gln Gly Tyr Cys
 35 40 45

Thr Thr Gly Gln Phe Pro Ala Ile Val Arg Lys Glu Thr Pro Glu Leu
 50 55 60

Asn Gly Arg Asp Ile Pro Ala Val Phe Asn Ile Thr Pro Met Pro Phe
 65 70 75 80

Val Arg Leu Pro Cys Thr Glu Ile Thr Trp Arg Ala Ser Cys Arg Leu
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Tyr Leu Arg Thr Leu Val Lys Tyr Leu Leu Ser Phe Leu Ala Ala Arg
 100 105 110

164

Met Gln Lys
115

<210> 283
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<213> Homo sapiens

<400> 283
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1 5 10 15

Ser Gln Arg Ser Trp Val Thr Gln Cys Leu Asp Thr Trp Lys Thr Cys
20 25 30

Thr Leu Ile Thr Gln Arg His Leu Ala Ser Asp His Leu Pro Ser Glu
35 40 45

Phe Leu Leu Val Gln Leu Gly Tyr His Pro Leu Thr His Gln Ala Ala
50 55 60

Pro His Leu Pro Leu Leu Leu Trp Gln Val Phe Pro Ala Tyr Gln
65 70 75 80

Glu Gln Gly Phe Ser Cys Lys Gly Gln Leu Leu Leu Gly Leu Leu Val
85 90 95

Ser Thr Asp Asn Ile Phe Leu Pro Ile Leu Gly Gln Ala Pro Gln Thr
100 105 110

His Pro Leu Leu Pro His Gln Arg Trp Ala Asn Gln Lys Glu Ser Val
115 120 125

Pro Val Lys Ile Glu Arg Tyr Leu Pro Gln Leu Glu Gln Arg Asp Trp
130 135 140

Pro Glu Phe Gly Lys Glu Gly Leu Leu His Lys Pro Arg Arg Gly Pro
145 150 155 160

Val Leu Ser Leu Pro Leu Asp Thr Val Glu Ser Gly His Leu Val Ser
165 170 175

Met Leu Cys Gln Lys Ala Tyr Gln Val Gly Arg Asn Leu
180 185

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CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL,
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patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

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WO 01/075068 A3

(54) Title: SECRETED PROTEINS AND POLYNUCLEOTIDES ENCODING THEM

(57) Abstract: Novel polynucleotides and the proteins encoded thereby are disclosed.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/09369

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : Please See Extra Sheet.

US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : *Please See Extra Sheet*

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Extra Sheet.**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | Database: N_Geneseq_1101; Accession NO: AAX60801; Agostino et al., "Human secreted protein encoding DNA (clone bd306_7)"; 09 August 1999; having 100% sequence identity to SEQ ID NO: 1; see entire document. | 1, 2, 7, 8 |
| X | Database: A_Geneseq_1101; Accession NO: AAY17219; Agostino et al.; "Human secreted protein (clone bd306_7); 09 August 1999; having 99.9% sequence identity to SEQ ID NO: 2; see entire document. | 1, 2, 7, 8 |

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

| | |
|---|--|
| * Special categories of cited documents: | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "A" document defining the general state of the art which is not considered to be of particular relevance | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "E" earlier document published on or after the international filing date | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "G" document member of the same patent family |
| "O" document referring to an oral disclosure, use, exhibition or other means | |
| "P" document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search

07 JUNE 2002

Date of mailing of the international search report

02 JUL 2002

Name and mailing address of the ISA/US
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/09369

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | WO 99/26961 A1 (GENETICS INSTITUTE, INC) 03 JUNE 1999, see entire document, especially pages 51 and 57. | 1-5, 7, 8 |
| X | Database: SPTREMBL_17; Accession NO: O75718; Castagnola et al. " Cartilage-associated protein (CASP) precursor"; 01 November 1998; having 99.9% sequence identity to SEQ ID NO: 2; see entire document. | 1, 2, 7 |

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/09369

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-5, 7, 8

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

A. CLASSIFICATION OF SUBJECT MATTER:

IPC (7):

C07H 21/02, 21/04; C07K 5/00, 14/00; C12Q 1/68; C12P 21/06, C12N 1/20, 15/63, 5/00

A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

536/23.1, 23.5, 24.31; 530/300, 350; 435/6, 69.1, 252.3, 320.1, 325

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

Sequence Search (Database: GenEmbl, N_Geneseq_1101, Issued_Patents_NA, EST, A_Geneseq_1101, Issued_Patents_AA, Pir_6,8 SwissProt_39, SPTREMBL_17)

STN (Database: CA, CAPLUS, USPATFULL)

DIALOG (Database: MEDLINE, BIOSIS, DIALOG GLOBAL REPORTER, DERWENT WPI)

Search Terms: polynucleotide, polypeptide, secreted protein, transmembrane protein

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I. Claims 1-5, 7, 8, directed to an isolated polynucleotide comprising or related to nucleotide sequence of SEQ ID NO: 1 that encodes a protein of SEQ ID NO: 2, vector, host cell and a process of producing the protein recombinantly.

Group II. Claims 6, 9-12, directed to an isolated protein comprising or related to amino acid sequence of SEQ ID NO: 2, a composition comprising the protein related to SEQ ID NO: 2.

Group III. Claim 13, directed to an isolated polynucleotide comprising or related to the nucleotide sequence of SEQ ID NO: 19.

Group IV. Claim 14, directed to an isolated protein comprising or related to amino acid sequence of SEQ ID NO: 20.

and it considers that the International Application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated below:

The inventions listed as Groups I-IV do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The polynucleotides and polypeptides of each of the clones bd306_7 and ybd_1 in the claims are unrelated, each to the other. The polynucleotide sequences encode structurally distinct polypeptides and do not share a special technical feature. Furthermore, the technical feature that links the DNA, protein, methods of cDNA clone bd306_7 (claim 1) is not a contribution over the prior arts of Agostino et al. and Castagnola et al. See the various documents cited in the search report. Thus the technical feature of the polynucleotide sequence is not special and the groups are not so linked under PCT Rule 13.1. Additionally the claimed methods produce different products and/or different results which are not coextensive and which do not share the same technical feature.